

**STATE OF INDIANA**  
**DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

**PUBLIC NOTICE NO. 2023-05-IN0002101- RD**

**DATE OF NOTICE: MAY 10, 2023**

**RESPONSE DUE DATE: JUNE 9, 2023**

**The IDEM Office of Water Quality proposes the following NPDES DRAFT PERMIT:**

**MAJOR - Renewal**

**SABIC Innovative Plastics Mt. Vernon LLC**, NPDES Permit No. IN0002101, located at One Lexan Lane, Mount Vernon, IN (POSEY COUNTY). This major industrial facility is a manufacturer of plastic materials, organic and inorganic chemicals, and synthetic resins. It discharges an average daily volume of 6.8 million gallons of process wastewater, stormwater, groundwater remediation water, sanitary wastewater, and non-process wastewater into the Ohio River via three (3) permitted outfalls.

Outfall No.	Latitude	Longitude	Notes
002*	37° 53' 58.2"	-87° 55' 55.4"	Treated effluent discharged with a diffuser (dilution factor of 30.3)
006*	37° 53' 57.3"	-87° 55' 55.1"	Treated effluent discharged without a diffuser.
007	37° 53' 57.5"	-87° 55' 54.8"	Administrative outfall. Represents the mass-based effluent limitations that are applicable to combined discharges of Outfall 002 and Outfall 006

Permit Manager: Nicole Gardner, (317) 232-8707 or via email at Ngardner@idem.IN.gov.  
Posted online at <https://www.in.gov/idem/public-notices/>.

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**PROCEDURES TO FILE A RESPONSE**

You are hereby notified of the availability of a 30-day public comment period regarding the referenced draft NPDES permit, in accordance with 327 IAC 5-3-9. The NPDES application and draft permit documents are available for inspection at IDEM, Office of Water Quality, Indiana Government Center North - Room 1255, 100 N. Senate Ave, Indianapolis, IN 46204 from 9:00 a.m. until 4:00 p.m., Monday thru Friday, (copies 10¢ per page). The Draft Permit is posted online on the above-referenced IDEM public notice web page. A courtesy copy has also been sent via email to the local County Health Department. Please tell others whom you think would be interested in this matter. For more information about public participation including your rights & responsibilities, please see <https://www.in.gov/idem/public-notices/>. You may want to consult our online Citizens' Guide to IDEM: <https://www.in.gov/idem/resources/citizens-guide-to-idem/>.

**Comments:** The proposed decision to issue a permit is tentative. Interested persons are invited to submit written comments on the draft permit. All comments must be delivered to IDEM or postmarked no later than the Response Due Date noted to be considered in the decision to issue a final permit. Deliver or mail all requests or comments to the attention of the Permit Manager at the above address.

**To Request a Public Hearing:** Any person may request a public hearing. A written request must be submitted to the above address on or before the Response Due Date. The written request shall include: the name and address of the person making the request, the interest of the person making the request, persons represented by the person making the request, the reason for the request and the issues proposed for consideration at the hearing. The Department will determine whether to hold a public hearing based upon the comments and the rationale for the request. Public Notice of such a hearing will be circulated in at least one newspaper in the geographical area of the discharge and to those persons submitting comments and/or on the mailing list at least 30 days prior to the hearing.



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

100 N. Senate Avenue • Indianapolis, IN 46204  
(800) 451-6027 • (317) 232-8603 • [www.idem.IN.gov](http://www.idem.IN.gov)

**Eric J. Holcomb**  
*Governor*

**Brian C. Rockensuess**  
*Commissioner*

May 10, 2023

VIA ELECTRONIC MAIL

Mr. John Guggenheim, Environmental Engineer  
SABIC Innovative Plastics Mt. Vernon LLC  
One Lexan Lane  
Mt. Vernon, IN 47620

Dear Mr. Guggenheim:

Re: NPDES Permit No. IN0002101  
Draft Permit  
SABIC Innovative Plastics Mt. Vernon LLC  
Mt. Vernon, IN – Posey County

Your application and supporting documents have been reviewed and processed in accordance with rules adopted under 327 IAC 5. Enclosed is a copy of the draft NPDES Permit.

Pursuant to IC 13-15-5-1, IDEM will publish the draft permit document online at <https://www.in.gov/idem/public-notices/>. Additional information on public participation can be found in the "Citizens' Guide to IDEM", available at <https://www.in.gov/idem/resources/citizens-guide-to-idem/>. A 30-day comment period is available to solicit input from interested parties, including the public.

Please review this draft permit and associated documents carefully to become familiar with the proposed terms and conditions. Comments concerning the draft permit should be submitted in accordance with the procedure outlined in the enclosed public notice form. We suggest that you meet with us to discuss major concerns or objections you may have with the draft permit. Questions concerning this draft permit may be addressed to Nikki Gardner, at 317/232-8707 or [ngardner@idem.in.gov](mailto:ngardner@idem.in.gov).

Sincerely,

Richard Hamblin, Chief  
Industrial NPDES Permits Section  
Office of Water Quality

Enclosures

cc: Posey County Health Department  
Chief, Permits Section, U.S. EPA, Region 5  
Stacey Cochran, ORSANCO  
Jeremy Ferguson, IDEM

STATE OF INDIANA  
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et seq., the "Clean Water Act" or "CWA"), and IDEM's authority under IC 13-15,

SABIC INNOVATIVE PLASTICS MT. VERNON, LLC

is authorized to discharge from the organic chemicals, chlorine, and engineering plastics manufacturing facility that is located at One Lexan Lane, Mount Vernon, IN, to receiving waters identified as the Ohio River in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III, IV, and V hereof. This permit may be revoked for the nonpayment of applicable fees in accordance with IC 13-18-20.

Effective Date: \_\_\_\_\_

Expiration Date: \_\_\_\_\_

In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit such information and forms as are required by the Indiana Department of Environmental Management no later than 180 days prior to the date of expiration.

Issued on \_\_\_\_\_ for the Indiana Department of Environmental Management.

Jerry Dittmer, Chief  
Permits Branch  
Office of Water Quality

## PART I

### A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. The permittee is authorized to discharge from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from Outfall 002[1][2][16]. The discharge is limited to OCPSF process wastewater, Chlor-alkali process wastewater, cooling tower blowdown, boiler blowdown, steam condensates, demineralizer regeneration waters, sanitary wastewater[3], coal ash landfill leachate, contaminated groundwater from remediation activities, basement sump groundwater, Mill water treatment plant wastewater, sump cleaning water, miscellaneous wastewaters from areas identified in the NPDES permit renewal application [4], process area and contaminated stormwater. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Ohio River. Such discharge shall be limited and monitored by the permittee as specified below:

## DISCHARGE LIMITATIONS [5][6]

## Outfall 002 - Table 1

[illegible]

Outfall 002 - Table 2

Parameter	Quality or Concentration				Monitoring Requirements	
	Daily Minimum	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
pH[15]	6.0	----	9.0	s.u.	Continuous	Grab

- [1] Outfall 002 represents discharges from the outfall located at the following coordinates **with an in-stream diffuser**:
- Latitude: 37° 53' 58.2" Longitude: -87° 55' 55.4"
- [2] The permittee shall post a permanent marker on the stream bank at each outfall discharging directly to the Ohio River. The marker shall consist at a minimum of the name of the establishment to which the permit was issued, the permit number, and the outfall number. The information shall be printed in letters not less than two inches in height. The marker shall be a minimum of 2 feet by 2 feet and shall be a minimum of 3 feet above the ground.
- [3] Disinfection of sanitary wastewater is required at all times.
- [4] Water from pressure testing piping, tanks, and other equipment; wash waters from process area cleaning; wastewaters generated during shutdowns, maintenance turn arounds, and start-ups; wastewater (including stormwater) from material handling areas including but not limited to truck loading/unloading docks, railcar and ship loading/unloading areas, railcar and tank truck unloading/loading containment sumps; laboratory wastewater; wastewater from painting and surface prep activities; water treatment and WWTP chemicals, wastewater from Haz Mat team and Fire Brigade activities, including training; and fire system flush waters.
- [5] See Part I.B. of the permit for the minimum narrative limitations.
- [6] In the event that a new water treatment additive is to be used that will contribute to this Outfall, or changes are to be made in the use of water treatment additives, including changes to dosage that would increase the discharge concentration of the additives, the permittee must apply for and receive approval from IDEM prior to such discharge. Discharges of any such additives must meet Indiana water quality standards. The permittee must apply for permission to use water treatment additives by completing and submitting State Form 50000 (Application for Approval to Use Water Treatment Additives) currently available at:  
<https://www.in.gov/idem/forms/idem-agency-forms/>.
- [7] The following EPA approved test methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Alternative methods may be used if first approved by IDEM and EPA, if applicable.

Parameter	Test Method	LOD	LOQ
Acrylonitrile	624	0.17 µg/l	0.54 µg/l
Benzo(a)anthracene	610	0.013 µg/l	0.041 µg/l
Benzo(a)pyrene	610	0.023 µg/l	0.073 µg/l
Benzo(k)fluoranthene	610	0.017 µg/l	0.054 µg/l
3,4-Benzofluoranthene	610	0.018 µg/l	0.057 µg/l
Chrysene	610	0.15 µg/l	0.48 µg/l
Hexachlorobenzene	612	0.05 µg/l	0.16 µg/l
Hexachlorobutadiene	612	0.34 µg/l	1.1 µg/l
Vinyl Chloride	624	0.15 µg/l	0.48 µg/l
Mercury	1631, Rev. E	0.2 ng/l	0.5 ng/l
Chlorine, Total residual	4500-Cl D-2000, E-2000 or G-2000	0.02 mg/l	0.06 mg/l

#### Case-Specific LOD/LOQ

The permittee may determine and use a case-specific LOD or LOQ using the analytical method specified above, or any other analytical method which is approved by the Commissioner, and EPA if applicable, prior to use. The LOD shall be derived by the procedure specified for method detection limits contained in 40 CFR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD. Other methods may be used if first approved by the Commissioner.

- [8] The permittee shall measure and report the identified metal as total recoverable metal.
- [9] The *E. coli* limitations and monitoring requirements apply from April 1 through October 31 annually.
- [10] The monthly average *E. coli* value shall be calculated as a geometric mean. Per 327 IAC 5-10-6, the concentration of *E. coli* shall not exceed one hundred twenty-five (125) cfu or mpn per 100 milliliters as a geometric mean of the effluent samples taken in a calendar month. No samples may be excluded when calculating the monthly geometric mean.
- [11] If less than ten samples are taken and analyzed for *E. coli* in a calendar month, no samples may exceed two hundred thirty-five (235) cfu or mpn as a daily maximum. However, when ten (10) or more samples are taken and analyzed for *E. coli* in a calendar month, not more than ten percent (10%) of those samples may exceed two hundred thirty-five (235) cfu or mpn as a daily maximum. When calculating ten percent, the result must not be rounded up. In reporting for compliance purposes on the Discharge Monitoring Report (DMR) form, the permittee shall record the highest non-excluded value for the daily maximum.



- [12] In order to comply with ORSANCO requirements, in accordance with 327 IAC 5-10-6-(b), fecal coliform is limited to a monthly average of 2,000 count per 100 ml from November 1 through March 31. Fecal coliform shall be calculated as a geometric mean.
- [13] The water quality based effluent limits (WQBEL) for hexachlorobenzene, hexachlorobutadiene, and TRC are less than the limits of quantitation (LOQ) as specified in footnote [7]. Compliance with this permit will be demonstrated if the effluent concentrations measured are less than the respective LOQ.

If the measured concentration of hexachlorobenzene, hexachlorobutadiene, or TRC are greater than the respective water quality based effluent limitations and above the respective LOD specified in footnote [7] in any three (3) consecutive analyses, or any five (5) out of nine (9) analyses, then the discharger shall:

- (1) Determine the source of the parameter through an evaluation of sampling techniques, analytical/laboratory procedures, and waste streams (including internal waste streams); and
- (2)
  - (a) The sampling and analysis for hexachlorobenzene and/or hexachlorobutadiene shall be increased to semi-annual and remain at this increased sampling frequency until:
    - (i) The increased sampling frequency for hexachlorobenzene and/or hexachlorobutadiene has been in place for at least 4.5 years;
    - (ii) At least nine (9) samples have been taken under this increased sampling frequency; and
    - (iii) The measured concentration of hexachlorobenzene and/or hexachlorobutadiene is less than the LOD specified in footnote [7] in at least seven (7) out of the nine (9) most recent analyses.
  - (b) The sampling and analysis for TRC shall be increased to 2 X Daily and remain at this increased sampling frequency until:
    - (i) The increased sampling frequency for hexachlorobenzene and/or hexachlorobutadiene has been in place for at least 4.5 days;
    - (ii) At least nine (9) samples have been taken under this increased sampling frequency; and
    - (iii) The measured concentration of hexachlorobenzene and/or hexachlorobutadiene is less than the LOD specified in footnote [7] in at least seven (7) out of the nine (9) most recent analyses.

- [14] At the end of a twelve-month sampling period, the permittee may request, in writing, a review of these requirements. Upon review by IDEM, the permit may be modified, after public notice and opportunity for hearing, to delete the monitoring requirements, reduce monitoring frequency, or to include appropriate effluent limitations.
- [15] If the permittee collects more than one grab sample on a given day for pH, the values shall not be averaged for reporting daily maximums or daily minimums. The permittee must report the individual minimum and the individual maximum pH value of any sample during the month on the Monthly Monitoring Report form.
- [16] Within three (3) months of the permit effective date, the permittee shall submit the remaining data required to complete the Form 2C.

2. The permittee is authorized to discharge from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from Outfall 006[1][2][16]. The discharge is limited to OCPSF process wastewater, Chlor-alkali process wastewater, cooling tower blowdown, boiler blowdown, steam condensates, demineralizer regeneration waters, sanitary wastewater[3], coal ash landfill leachate, contaminated groundwater from remediation activities, basement sump groundwater, Mill water treatment plant wastewater, sump cleaning water, miscellaneous wastewaters from areas identified in the NPDES permit renewal application [4], process area and contaminated stormwater. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Ohio River. Such discharge shall be limited and monitored by the permittee as specified below:

## DISCHARGE LIMITATIONS [5][6]

## Outfall 006 - Table 1

[illegible]

Outfall 006 - Table 2

Parameter	Quality or Concentration				Monitoring Requirements	
	Daily Minimum	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
pH[14]	6.0	----	9.0	s.u.	Continuous	Grab

- [1] Outfall 006 represents discharges from the outfall located at the following coordinates **without an in-stream diffuser**:  
  
Latitude: 37° 53' 57.3" Longitude: -87° 55' 55.1"
- [2] The permittee shall post a permanent marker on the stream bank at each outfall discharging directly to the Ohio River. The marker shall consist at a minimum of the name of the establishment to which the permit was issued, the permit number, and the outfall number. The information shall be printed in letters not less than two inches in height. The marker shall be a minimum of 2 feet by 2 feet and shall be a minimum of 3 feet above the ground.
- [3] Disinfection of sanitary wastewater is required at all times.
- [4] Water from pressure testing piping, tanks, and other equipment; wash waters from process area cleaning; wastewaters generated during shutdowns, maintenance turn arounds, and start-ups; wastewater (including stormwater) from material handling areas including but not limited to truck loading/unloading docks, railcar and ship loading/unloading areas, railcar and tank truck unloading/loading containment sumps; laboratory wastewater; wastewater from painting and surface prep activities; water treatment and WWTP chemicals, wastewater from Haz Mat team and Fire Brigade activities, including training; and fire system flush waters.
- [5] See Part I.B. of the permit for the minimum narrative limitations.
- [6] In the event that a new water treatment additive is to be used that will contribute to this Outfall, or changes are to be made in the use of water treatment additives, including changes to dosage that would increase the discharge concentration of the additives, the permittee must apply for and receive approval from IDEM prior to such discharge. Discharges of any such additives must meet Indiana water quality standards. The permittee must apply for permission to use water treatment additives by completing and submitting State Form 50000 (Application for Approval to Use Water Treatment Additives) currently available at:  
<https://www.in.gov/idem/forms/idem-agency-forms/>.
- [7] The following EPA approved test methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Alternative methods may be used if first approved by IDEM and EPA, if applicable.

Parameter	Test Method	LOD	LOQ
Acrylonitrile	624	0.17 µg/l	0.54 µg/l
Benzo(a)anthracene	610	0.013 µg/l	0.041 µg/l
Benzo(a)pyrene	610	0.023 µg/l	0.073 µg/l
Benzo(k)fluoranthene	610	0.017 µg/l	0.054 µg/l
3,4-Benzofluoranthene	610	0.018 µg/l	0.057 µg/l
Chrysene	610	0.15 µg/l	0.48 µg/l
Hexachlorobenzene	612	0.05 µg/l	0.16 µg/l
Hexachlorobutadiene	612	0.34 µg/l	1.1 µg/l
Vinyl Chloride	624	0.15 µg/l	0.48 µg/l
Mercury	1631, Rev. E	0.2 ng/l	0.5 ng/l
Chlorine, Total residual	4500-Cl D-2000, E-2000 or G-2000	0.02 mg/l	0.06 mg/l
Copper	200.8, Rev. 5.4	0.31 µg/l	1.0 µg/l
Silver	200.8, Rev. 5.4 SIM	0.005 µg/l	0.016 µg/l

#### Case-Specific LOD/LOQ

The permittee may determine and use a case-specific LOD or LOQ using the analytical method specified above, or any other analytical method which is approved by the Commissioner, and EPA if applicable, prior to use. The LOD shall be derived by the procedure specified for method detection limits contained in 40 CFR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD. Other methods may be used if first approved by the Commissioner.

- [8] The permittee shall measure and report the identified metal as total recoverable metal.
- [9] The *E. coli* limitations and monitoring requirements apply from April 1 through October 31 annually.
- [10] The monthly average *E. coli* value shall be calculated as a geometric mean. Per 327 IAC 5-10-6, the concentration of *E. coli* shall not exceed one hundred twenty-five (125) cfu or mpn per 100 milliliters as a geometric mean of the effluent samples taken in a calendar month. No samples may be excluded when calculating the monthly geometric mean.
- [11] If less than ten samples are taken and analyzed for *E. coli* in a calendar month, no samples may exceed two hundred thirty-five (235) cfu or mpn as a daily maximum. However, when ten (10) or more samples are taken and analyzed for *E. coli* in a calendar month, not more than ten percent (10%) of those samples may exceed two hundred thirty-five (235) cfu or mpn as a daily maximum. When calculating ten percent, the result must not be rounded up. In reporting for compliance purposes on the Discharge Monitoring Report (DMR) form, the permittee shall record the highest non-excluded value for the daily maximum.

- [12] In order to comply with ORSANCO requirements, in accordance with 327 IAC 5-10-6-(b), fecal coliform is limited to a monthly average of 2,000 count per 100 ml from November 1 through March 31. Fecal coliform shall be calculated as a geometric mean.
- [13] The water quality based effluent limits (WQBEL) for hexachlorobenzene, hexachlorobutadiene, and TRC are less than the limits of quantitation (LOQ) as specified in footnote [7]. Compliance with this permit will be demonstrated if the effluent concentrations measured are less than the respective LOQ.

If the measured concentration of hexachlorobenzene, hexachlorobutadiene, or TRC are greater than the respective water quality based effluent limitations and above the respective LOD specified in footnote [7] in any three (3) consecutive analyses, or any five (5) out of nine (9) analyses, then the discharger shall:

- (1) Determine the source of hexachlorobenzene, hexachlorobutadiene, or TRC through an evaluation of sampling techniques, analytical/laboratory procedures, and waste streams (including internal waste streams); and
- (2)
  - (a) The sampling and analysis for hexachlorobenzene and/or hexachlorobutadiene shall be increased to semi-annual and remain at this increased sampling frequency until:
    - (i) The increased sampling frequency for hexachlorobenzene and/or hexachlorobutadiene has been in place for at least 4.5 years;
    - (ii) At least nine (9) samples have been taken under this increased sampling frequency; and
    - (iii) The measured concentration of hexachlorobenzene and/or hexachlorobutadiene is less than the LOD specified in footnote [7] in at least seven (7) out of the nine (9) most recent analyses.
  - (b) The sampling and analysis for TRC shall be increased to 2 X Daily and remain at this increased sampling frequency until:
    - (i) The increased sampling frequency for hexachlorobenzene and/or hexachlorobutadiene has been in place for at least 4.5 days;
    - (ii) At least nine (9) samples have been taken under this increased sampling frequency; and
    - (iii) The measured concentration of hexachlorobenzene and/or hexachlorobutadiene is less than the LOD specified in footnote [7] in at least seven (7) out of the nine (9) most recent analyses.

- [14] If the permittee collects more than one grab sample on a given day for pH, the values shall not be averaged for reporting daily maximums or daily minimums. The permittee must report the individual minimum and the individual maximum pH value of any sample during the month on the Monthly Monitoring Report form.



3. The permittee is authorized to discharge from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from Outfall 007[1]. The discharge is limited to OCPSF process wastewater, Chlor-alkali process wastewater, cooling tower blowdown, boiler blowdown, steam condensates, demineralizer regeneration waters, sanitary wastewater[2], coal ash landfill leachate, contaminated groundwater from remediation activities, basement sump groundwater, Mill water treatment plant wastewater, sump cleaning water, miscellaneous wastewaters from areas identified in the NPDES permit renewal application [3], process area and contaminated stormwater. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Ohio River. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS

Outfall 007

Parameter	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Measurement Frequency	Sample Type
Flow	Report	Report	MGD	----	----	----	Daily	24 Hr. Total
Acenaphthene	1.17	3.13	lbs/day	----	----	----	Annually	24 Hr. Comp.
Acenaphthylene	1.17	3.13	lbs/day	----	----	----	Annually	24 Hr. Comp.
Acrylonitrile[7]	5.09	12.84	lbs/day	----	----	----	Annually	Grab
Anthracene	1.17	3.13	lbs/day	----	----	----	Annually	24 Hr. Comp.
Benzene	1.96	7.21	lbs/day	----	----	----	Annually	Grab
Benzo(a)anthracene[7]	1.17	3.13	lbs/day	----	----	----	Annually	24 Hr. Comp.
Benzo(a)pyrene[7]	1.22	3.24	lbs/day	----	----	----	Annually	24 Hr. Comp.
Benzo(k)fluoranthene[7]	1.17	3.13	lbs/day	----	----	----	Annually	24 Hr. Comp.
3,4-Benzofluoranthene[7]	1.22	3.24	lbs/day	----	----	----	Annually	24 Hr. Comp.
Bis(2-ethylhexyl)phthalate	5.46	14.80	lbs/day	----	----	----	Annually	24 Hr. Comp.
2,2-Bis(4-hydroxyphenol) propane	80.82	188.03	lbs/day	----	----	----	1 X Month	24 Hr. Comp.
BOD <sub>5</sub>	1,494	3,938	lbs/day	----	----	----	Daily	24 Hr. Comp.
Carbon Tetrachloride	0.96	2.02	lbs/day	----	----	----	1 X Month	Grab
Chlorobenzene	0.80	1.49	lbs/day	----	----	----	Annually	Grab
Chloroethane	5.52	14.22	lbs/day	----	----	----	Annually	Grab
Chloroform	1.19	2.61	lbs/day	----	----	----	1 X Month	Grab
2-Chlorophenol	1.64	5.20	lbs/day	----	----	----	1 X Month	24 Hr. Comp.
Chromium (Total)[4]	5.15	12.85	lbs/day	----	----	----	1 X Month	24 Hr. Comp.
Chrysene[7]	1.17	3.13	lbs/day	----	----	----	Annually	24 Hr. Comp.
Copper[4][7]	4.25	9.11	lbs/day	----	----	----	1 X Month	24 Hr. Comp.
Cyanide (Total)[7]	1.95	5.57	lbs/day	----	----	----	1 X Month	Grab

Di-n-butyl phthalate	1.43	3.02	lbs/day	----	----	----	Annually	24 Hr. Comp.
1,2-Dichlorobenzene	4.08	8.65	lbs/day	----	----	----	Annually	Grab
1,3-Dichlorobenzene	1.64	2.33	lbs/day	----	----	----	Annually	Grab
1,4-Dichlorobenzene	0.80	1.49	lbs/day	----	----	----	Annually	Grab
1,1-Dichloroethane	1.17	3.13	lbs/day	----	----	----	Annually	Grab
1,2-Dichloroethane	3.61	11.19	lbs/day	----	----	----	Annually	Grab
1,1-Dichloroethylene	0.85	1.33	lbs/day	----	----	----	Annually	Grab
1,2-trans-Dichloroethylene	1.11	2.86	lbs/day	----	----	----	Annually	Grab
2,4-Dichlorophenol	2.07	5.94	lbs/day	----	----	----	1 X Month	24 Hr. Comp.
1,2-Dichloropropane	8.12	12.20	lbs/day	----	----	----	Annually	Grab
1,3-Dichloropropylene	1.54	2.33	lbs/day	----	----	----	Annually	Grab
Diethyl phthalate	4.30	10.77	lbs/day	----	----	----	Annually	24 Hr. Comp.
2,4-Dimethylphenol	0.96	1.91	lbs/day	----	----	----	Annually	24 Hr. Comp.
Dimethyl phthalate	1.01	2.49	lbs/day	----	----	----	Annually	24 Hr. Comp.
4,6-Dinitro-o-cresol	4.14	14.69	lbs/day	----	----	----	1 X Month	24 Hr. Comp.
2,4-Dinitrophenol	3.77	6.52	lbs/day	----	----	----	1 X Month	24 Hr. Comp.
2,4-Dinitrotoluene	5.99	15.12	lbs/day	----	----	----	Annually	24 Hr. Comp.
2,6-Dinitrotoluene	13.53	34.00	lbs/day	----	----	----	Annually	24 Hr. Comp.
Ethylbenzene	1.70	5.73	lbs/day	----	----	----	Annually	Grab
Fluoranthene	1.33	3.61	lbs/day	----	----	----	Annually	24 Hr. Comp.
Fluorene	1.17	3.13	lbs/day	----	----	----	Annually	24 Hr. Comp.
Hexachlorobenzene[7]	0.39	0.92	lbs/day	----	----	----	Annually	24 Hr. Comp.
Hexachlorobutadiene[7]	1.06	2.60	lbs/day	----	----	----	Annually	24 Hr. Comp.
Hexachloroethane	1.11	2.86	lbs/day	----	----	----	Annually	24 Hr. Comp.
Lead[4]	2.86	6.59	lbs/day	----	----	----	Annually	24 Hr. Comp.
Methyl Chloride	4.56	10.08	lbs/day	----	----	----	Annually	Grab
Methylene chloride	2.27	5.05	lbs/day	----	----	----	1 X Month	Grab
Naphthalene	1.17	3.13	lbs/day	----	----	----	Annually	24 Hr. Comp.
Nickel[4]	9.97	21.04	lbs/day	----	----	----	1 X Month	24 Hr. Comp.
Nitrobenzene	1.43	3.61	lbs/day	----	----	----	Annually	24 Hr. Comp.
Nitro-N-Methyl Phthalimide	Report	Report	lbs/day	----	----	----	1 X Month	24 Hr. Comp.
2-Nitrophenol	2.18	3.66	lbs/day	----	----	----	1 X Month	24 Hr. Comp.

4-Nitrophenol	3.82	6.58	lbs/day	----	----	----	1 X Month	24 Hr. Comp.
Oil & Grease	284[5]	284[5]	lbs/day	----	----	----	Annually	Grab
Phenanthrene	1.17	3.13	lbs/day	----	----	----	Annually	24 Hr. Comp.
Phenol	0.80	1.38	lbs/day	----	----	----	1 X Month	24 Hr. Comp.
Total Phenols	39.72	79.44	lbs/day	----	----	----	1 X Month	24 Hr. Comp.
Pyrene	1.33	3.55	lbs/day	----	----	----	Annually	24 Hr. Comp.
Temperature	Report	Report	°F	----	----	----	Daily	Grab
Tetrahydrofuran	Report	Report	lbs/day	----	----	----	1 X Month	24 Hr. Comp.
Tetrachloroethylene	1.17	2.97	lbs/day	----	----	----	Annually	Grab
Toluene	1.38	4.24	lbs/day	----	----	----	1 X Month	Grab
TRC[7]	3.76	6.19	lbs/day	----	----	----	Daily	Grab
1,2,4-Trichlorobenzene	3.61	7.43	lbs/day	----	----	----	Annually	24 Hr. Comp.
1,1,1-Trichloroethane	1.11	2.86	lbs/day	----	----	----	Annually	Grab
1,1,2-Trichloroethane	1.11	2.86	lbs/day	----	----	----	Annually	Grab
Trichloroethylene	1.11	2.86	lbs/day	----	----	----	Annually	Grab
TSS	2,358	7,576	lbs/day	----	----	----	Daily	24 Hr. Comp.
Vinyl Chloride[7]	5.52	14.22	lbs/day	----	----	----	Annually	Grab
Zinc[4]	4.87	12.11	lbs/day	----	----	----	1 X Month	24 Hr. Comp.

- [1] Outfall 007 is an administrative outfall and represents the combined discharges from Outfall 002 and Outfall 006.
- [2] Disinfection of sanitary wastewater is required at all times.
- [3] Water from pressure testing piping, tanks, and other equipment; wash waters from process area cleaning; wastewaters generated during shutdowns, maintenance turn arounds, and start-ups; wastewater (including stormwater) from material handling areas including but not limited to truck loading/unloading docks, railcar and ship loading/unloading areas, railcar and tank truck unloading/loading containment sumps; laboratory wastewater; wastewater from painting and surface prep activities; water treatment and WWTP chemicals, wastewater from Haz Mat team and Fire Brigade activities, including training; and fire system flush waters.
- [4] The permittee shall measure and report the identified metal as total recoverable metal.
- [5] Compliance with this parameter will be demonstrated if the effluent concentration measured and reported for Outfall 002 is less than 5 mg/l.
- [6] The permittee must provide an updated OCPSF WWTP breakdown with the next permit renewal application. The breakdown must include the following at a minimum:
  - (1) List of all operations discharging to the WWTP,
  - (2) Flow from each operation to the WWTP (MGD), and
  - (3) Flow from each operation with OCPSF organics (MGD).
- [7] The following EPA approved test methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Alternative methods may be used if first approved by IDEM and EPA, if applicable.

Parameter	Test Method	LOD	LOQ
Acrylonitrile	624	0.17 µg/l	0.54 µg/l
Benzo(a)anthracene	610	0.013 µg/l	0.041 µg/l
Benzo(a)pyrene	610	0.023 µg/l	0.073 µg/l
Benzo(k)fluoranthene	610	0.017 µg/l	0.054 µg/l
3,4-Benzofluoranthene	610	0.018 µg/l	0.057 µg/l
Chrysene	610	0.15 µg/l	0.48 µg/l
Hexachlorobenzene	612	0.05 µg/l	0.16 µg/l
Hexachlorobutadiene	612	0.34 µg/l	1.1 µg/l
Vinyl Chloride	624	0.15 µg/l	0.48 µg/l
Chlorine, Total residual	4500-Cl D-2000, E-2000 or G-2000	0.02 mg/l	0.06 mg/l
Copper	200.8, Rev. 5.4	0.31 µg/l	1.0 µg/l

Cyanide, Total	335.4, Rev. 1.0 (1993) or 4500-CN- E-1999	5 µg/l	16 µg/l
Cyanide, Total	Kelada-01	0.5 µg/l	1.6 µg/l

Case-Specific LOD/LOQ

The permittee may determine and use a case-specific LOD or LOQ using the analytical method specified above, or any other analytical method which is approved by the Commissioner, and EPA if applicable, prior to use. The LOD shall be derived by the procedure specified for method detection limits contained in 40 CFR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD. Other methods may be used if first approved by the Commissioner.

B. MINIMUM NARRATIVE LIMITATIONS

At all times the discharge from any and all point sources specified within this permit shall not cause receiving waters:

1. including waters within the mixing zone, to contain substances, materials, floating debris, oil, scum attributable to municipal, industrial, agricultural, and other land use practices, or other discharges that do any of the following:
  - a. will settle to form putrescent or otherwise objectionable deposits;
  - b. are in amounts sufficient to be unsightly or deleterious;
  - c. produce color, visible oil sheen, odor, or other conditions in such degree as to create a nuisance;
  - d. are in amounts sufficient to be acutely toxic to , or to otherwise severely injure or kill aquatic life, other animals, plants, or humans;
  - e. are in concentrations or combinations that will cause or contribute to the growth of aquatic plants or algae to such a degree as to create a nuisance, be unsightly, or otherwise impair the designated uses.
2. outside the mixing zone, to contain substances in concentrations that on the basis of available scientific data are believed to be sufficient to injure, be chronically toxic to, or be carcinogenic, mutagenic, or teratogenic to humans, animals, aquatic life, or plants.

C. MONITORING AND REPORTING

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge flow and shall be taken at times which reflect the full range and concentration of effluent parameters normally expected to be present. Samples shall not be taken at times to avoid showing elevated levels of any parameters.

2. Monthly Reporting

The permittee shall submit monitoring reports to the Indiana Department of Environmental Management (IDEM) containing results obtained during the previous month and shall be submitted no later than the 28th day of the month following each completed monitoring period. The first report shall be submitted by the 28th day of the month following the month in which the permit becomes effective.

These reports shall include, but not necessarily be limited to, the Discharge Monitoring Report (DMR) and the Monthly Monitoring Report (MMR). All reports shall be submitted electronically by using the NetDMR application, upon registration, receipt of the NetDMR Subscriber Agreement, and IDEM approval of the proposed NetDMR Signatory. Access the NetDMR website (for initial registration and DMR/MMR submittal) via CDX at: <https://cdx.epa.gov/>. The Regional Administrator may request the permittee to submit monitoring reports to the Environmental Protection Agency if it is deemed necessary to assure compliance with the permit. See Part II.C.10 of this permit for Future Electronic Reporting Requirements.

- a. Calculations that require averaging of measurements of daily values (both concentrations and mass) shall use an arithmetic mean, except the monthly average for *E. coli* shall be calculated as a geometric mean.
- b. Daily effluent values (both mass and concentration) that are less than the LOQ that are used to determine the monthly average effluent level shall be accommodated in calculation of the average using statistical methods that have been approved by the Commissioner.
- c. Effluent concentrations less than the LOD shall be reported on the Discharge Monitoring Report (DMR) forms as < (less than) the value of the LOD. For example, if a substance is not detected at a concentration of 0.1 µg/l, report the value as <0.1 µg/l.
- d. Effluent concentrations greater than or equal to the LOD and less than the LOQ that are reported on a DMR shall be reported as the actual value and annotated on the DMR to indicate that the value is not quantifiable.
- e. Mass discharge values which are calculated from concentrations reported as less than the value of the limit of detection shall be reported as less than the corresponding mass discharge value.
- f. Mass discharge values that are calculated from effluent concentrations greater than the limit of detection shall be reported as the calculated value.



3. Definitions

- a. “Monthly Average” means the total mass or flow-weighted concentration of all daily discharges during a calendar month on which daily discharges are sampled or measured, divided by the number of daily discharges sampled and/or measured during such calendar month. The monthly average discharge limitation is the highest allowable average monthly discharge for any calendar month.
- b. “Daily Discharge” means the total mass of a pollutant discharged during the calendar day or, in the case of a pollutant limited in terms other than mass pursuant to 327 IAC 5-2-11(e), the average concentration or other measurement of the pollutant specified over the calendar day or any twenty-four hour period that reasonably represents the calendar day for the purposes of sampling.
- c. “Daily Maximum” means the maximum allowable daily discharge for any calendar day.
- d. A “24-hour composite sample” means a sample consisting of at least 3 individual flow-proportioned samples of wastewater, taken by the grab sample method or by an automatic sampler, which are taken at approximately equally spaced time intervals for the duration of the discharge within a 24-hour period and which are combined prior to analysis. A flow-proportioned composite sample may be obtained by:
  - (1) recording the discharge flow rate at the time each individual sample is taken,
  - (2) adding together the discharge flow rates recorded from each individuals sampling time to formulate the “total flow” value,
  - (3) the discharge flow rate of each individual sampling time is divided by the total flow value to determine its percentage of the total flow value,
  - (4) then multiply the volume of the total composite sample by each individual sample’s percentage to determine the volume of that individual sample which will be included in the total composite sample.
- e. “Concentration” means the weight of any given material present in a unit volume of liquid. Unless otherwise indicated in this permit, concentration values shall be expressed in milligrams per liter (mg/l).

- f. The "Regional Administrator" is defined as the Region 5 Administrator, U.S. EPA, located at 77 West Jackson Boulevard, Chicago, Illinois 60604.
- g. The "Commissioner" is defined as the Commissioner of the Indiana Department of Environmental Management, which is located at the following address: 100 North Senate Avenue, Indianapolis, Indiana 46204.
- h. "Limit of Detection" or "LOD" means the minimum concentration of a substance that can be measured and reported with ninety-nine percent (99%) confidence that the analyte concentration is greater than zero (0) for a particular analytical method and sample matrix.
- i. "Limit of Quantitation" or "LOQ" means a measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calibrated at a specified concentration above the method detection level. It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for monitoring of the contaminant. This term is also sometimes called limit of quantification or quantification level.
- j. "Method Detection Level" or "MDL" means the minimum concentration of an analyte (substance) that can be measured and reported with a ninety-nine percent (99%) confidence that the analyte concentration is greater than zero (0) as determined by procedure set forth in 40 CFR 136, Appendix B. The method detection level or MDL is equivalent to the LOD.
- k. "Grab Sample" means a sample which is taken from a wastestream on a one-time basis without consideration of the flow rate of the wastestream and without considerations of time.

4. Test Procedures

The analytical and sampling methods used shall conform to the version of 40 CFR 136 incorporated by reference in 327 IAC 5. Different but equivalent methods are allowable if they receive the prior written approval of the Commissioner and the U.S. Environmental Protection Agency. When more than one test procedure is approved for the purposes of the NPDES program under 40 CFR 136 for the analysis of a pollutant or pollutant parameter, the test procedure must be sufficiently sensitive as defined at 40 CFR 122.21(e)(3) and 122.44(i)(1)(iv).

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall maintain records of all monitoring information and monitoring activities, including:

- a. The date, exact place and time of sampling or measurement;
- b. The person(s) who performed the sampling or measurements;
- c. The date(s) analyses were performed;
- d. The person(s) who performed the analyses;
- e. The analytical techniques or methods used; and
- f. The results of such measurements and analyses.

6. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of this monitoring shall be included in the calculation and reporting of the values required in the monthly Discharge Monitoring Report (DMR) and Monthly Monitoring Report (MMR). Such increased frequency shall also be indicated. Other monitoring data not specifically required in this permit (such as internal process or internal waste stream data) which is collected by or for the permittee need not be submitted unless requested by the Commissioner.

7. Records Retention

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed and calibration and maintenance of instrumentation and recording from continuous monitoring instrumentation, shall be retained for a minimum of three (3) years. In cases where the original records are kept at another location, a copy of all such records shall be kept at the permitted facility. The three years shall be extended:

- a. automatically during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or regarding promulgated effluent guidelines applicable to the permittee; or
- b. as requested by the Regional Administrator or the Indiana Department of Environmental Management.

D. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

To adequately assess the effects of the effluent on aquatic life, the permittee is required by this section of the permit to conduct acute whole effluent toxicity (WET) testing. Part I.D.1. of this permit describes the testing procedures and Part I.D.2. describes the toxicity reduction evaluation (TRE) which is only required if the effluent demonstrates toxicity in two (2) consecutive toxicity tests as described in Part I.D.1.f.

1. Whole Effluent Toxicity (WET) Tests

The permittee must conduct the series of aquatic toxicity tests specified in Part I.D.1.d. to monitor the acute toxicity of the effluent discharged from Outfall 002. The permittee is also required to continue testing at Outfall 006 when the Ohio River stage at Evansville RM 791.5 is less than 32.3 feet. The permittee may request that IDEM waive testing at Outfall 006 to facilitate repair or replacement of the Outfall 002 diffuser. Such request shall be made in writing at least ten (10) days prior to the initiation of diffuser repair or replacement and include an estimate of the number of days that discharge from Outfall 006 will occur.

For both Outfalls 002 and 006, if toxicity is demonstrated in two (2) consecutive toxicity tests, as described in Part I.D.1.f., with any test species during the term of the permit, the permittee is required to conduct a TRE under Part I.D.2.

a. Toxicity Test Procedures and Data Analysis

- (1) All test organisms, test procedures and quality assurance criteria used must be in accordance with Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, EPA-821-R-02-012, October 2002 (hereinafter "Acute Toxicity Test Method"), or most recent update that conforms to the version of 40 CFR 136 incorporated by reference in 327 IAC 5. [References to specific portions of the Acute Toxicity Test Method contained in this Part I.D. are provided for informational purposes. If the Acute Toxicity Test Method is updated, the corresponding provisions of that updated method would be applicable.]
- (2) Any circumstances not covered by the above methods, or that require deviation from the specified methods must first be approved by the IDEM Permits Branch.

- (3) The determination of acute endpoints of toxicity (LC<sub>50</sub> values) must be made in accordance with the procedures in Section 11, "Acute Toxicity Data Analysis" for multi-effluent-concentration acute toxicity tests (see flowchart in Figure 6) of the Acute Toxicity Test Method.

b. Types of Whole Effluent Toxicity Tests

- (1) Fathead Minnow Acute Toxicity Test: Tests may include a 96-hour definitive static-renewal LC<sub>50</sub> toxicity test using fathead minnow (*Pimephales promelas*) as the test organism. The test must be conducted on a 24-hour composite sample of the final effluent. All test solutions must be renewed daily. On day three, at the end of 48 hours test duration, a second (fresh) 24-hour composite sample of the effluent must be used to renew the test solutions. All other test conditions and test acceptability criteria for the fathead minnow acute toxicity test must be in accordance with the test requirements in Section 9, "Acute Toxicity Test Procedures", Table 14, (Test Method 2000.0), of the Acute Toxicity Test Method.
- (2) Daphnid - *Ceriodaphnia dubia*, *Daphnia pulex* and *Daphnia magna* Acute Toxicity Tests: Tests may also include a 48-hour definitive static-renewal LC<sub>50</sub> toxicity test using one or more daphnids (*Ceriodaphnia dubia*, *Daphnia pulex* or *Daphnia magna*) as the test organisms. The tests must be conducted on a 24-hour composite sample of final effluent. All test solutions must be renewed daily. All other test conditions and test acceptability criteria for the daphnid acute toxicity tests must be in accordance with the test requirements in Section 9, "Acute Toxicity Test Procedures", Table 12 (Test Method 2002.0; *Ceriodaphnia dubia*) and Table 13 (Test Method 2021.0; *Daphnia pulex* and *Daphnia magna*), of the Acute Toxicity Test Method.
- (3) The whole effluent dilution series for the definitive test must include a control and at least five effluent concentrations with a minimum dilution factor of 0.5. The effluent concentrations selected must include and, if practicable, bracket the effluent concentration associated with the determination of acute toxicity provided in Part I.D.1.f.(1). Guidance on selecting effluent test concentrations is included in Section 9.3 of the Acute Toxicity Test Method. The use of an alternate procedure for selecting test concentrations must first be approved by the IDEM Permits Branch.

- (4) If, in any control group, more than 10% of the test organisms die in either the 96-hour fathead minnow or 48-hour daphnid species acute toxicity tests, respectively, that test is considered invalid and the respective toxicity test must be repeated.

c. Effluent Sample Collection and Chemical Analysis

- (1) Whole effluent samples taken for the purposes of toxicity testing must be 24-hour composite samples collected at a point that is representative of the final effluent, but prior to discharge. Effluent sampling for the toxicity testing may be coordinated with other permit sampling requirements as appropriate to avoid duplication. First use of the whole effluent toxicity testing samples must not exceed 36 hours after termination of the 24-hour composite sample collection. For discharges of less than 24 hours in duration, composite samples must be collected for the duration of the discharge within a 24-hour period (see "24-hour composite sample" definition in Part I.C.3. of this permit).
- (2) Chemical analysis must accompany each effluent sample taken for toxicity testing, including each sample taken for the repeat testing as outlined in Part I.D.1.f.(2). The chemical analysis detailed in Part I.A.1 and Part I.A.2 must be conducted for the effluent sample in accordance with Part I.C.4. of this permit.

d. Toxicity Testing Species, Frequency and Duration

Acute toxicity testing for *Ceriodaphnia dubia* must be conducted once every six (6) months, as calculated from the effective date of the permit, for the duration of the permit. Under the previous permit, this facility conducted whole effluent toxicity testing using the most sensitive species. Based on the permittee's record of compliance with whole effluent toxicity testing, the number of species tested may continue to include only the one most sensitive to the toxicity in the effluent.

If a TRE is initiated during the term of the permit, after receiving notification under Part I.D.1.e., the Compliance Data Section will suspend the toxicity testing requirements above for the term of the TRE compliance schedule described in Part I.D.2. After successful completion of the TRE, the toxicity tests established under Part I.D.2.c.(4) must be conducted once every six (6) months, as calculated from the first day of the first month following successful completion of the post-TRE toxicity tests (see Part I.D.2.c.(4)), for the remainder of the permit term.

e. Reporting

- (1) Notifications of the failure of two (2) consecutive toxicity tests and the intent to begin the implementation of a toxicity reduction evaluation (TRE) under Part I.D.1.f.(3) must be submitted in writing to the Compliance Data Section of IDEM's Office of Water Quality.
- (2) Results of all toxicity tests, including invalid tests, must be reported to IDEM according to the general format and content recommended in the Acute Toxicity Test Method, Section 12, "Report Preparation and Test Review". However, only the results of valid toxicity tests are to be reported on the discharge monitoring report (DMR). The results of the toxicity tests and laboratory report are due by the earlier of 60 days after completion of the test or the 28<sup>th</sup> day of the month following the end of the period established in Part I.D.1.d.
- (3) The full whole effluent toxicity (WET) test laboratory report must be submitted to IDEM electronically as an attachment to an e-mail to the Compliance Data Section at [wwreports@idem.IN.gov](mailto:wwreports@idem.IN.gov). The results must also be submitted via NetDMR.
- (4) For quality control and ongoing laboratory performance, the laboratory report must include results from appropriate standard reference toxicant tests for acute toxicity. This will consist of endpoints of acute toxicity (LC<sub>50</sub> values) obtained from reference toxicant tests conducted within 30 days of the most current effluent toxicity tests and from similarly obtained historical reference toxicant data with mean values and appropriate ranges for each species tested for at least three months to one year. Toxicity test laboratory reports must also include copies of chain-of-custody records and laboratory raw data sheets.
- (5) Statistical procedures used to analyze and interpret toxicity data (e.g., the Graphical Method, the Spearman-Kärber Method, the Trimmed Spearman-Kärber Method and the Probit Method), including 95% confidence intervals used to evaluate acute endpoints of toxicity, must be described and included as part of the toxicity test laboratory report.
- (6) For valid toxicity tests, the whole effluent toxicity (WET) test laboratory report must include a summary table of the results for each species tested as shown in the table presented below.

This table will provide toxicity test results, reported in acute toxic units (TU<sub>a</sub>), for evaluation under Part I.D.1.f. and reporting on the discharge monitoring report (DMR).

Test Organism [1]	Test Type	Endpoint	Units	Result	Compliance Limit [4]	Pass/Fail [5]	Reporting
Outfall 002 <i>Ceriodaphnia dubia</i>	48-hour Definitive Static-Renewal	48-hr. LC <sub>50</sub>	%	Report			Laboratory Report
			TU <sub>a</sub>	Report			
		Toxicity (acute) [2]	TU <sub>a</sub>	Report [3]	9.1	Report	Laboratory Report and <b>NetDMR</b> (Parameter Code 61425)
Outfall 006 <i>Ceriodaphnia dubia</i>	96-hour Definitive Static-Renewal	96-hr. LC <sub>50</sub>	%	Report			Laboratory Report
			TU <sub>a</sub>	Report			
		Toxicity (acute) [2]	TU <sub>a</sub>	Report [3]	1.0	Report	Laboratory Report and <b>NetDMR</b> (Parameter Code 61427)

[1] For the whole effluent toxicity (WET) test laboratory report, eliminate from the table any species that was not tested.

[2] The toxicity (acute) endpoint for *Ceriodaphnia dubia*, *Daphnia magna* and *Daphnia pulex* is the 48-hr. LC<sub>50</sub> result reported in acute toxic units (TU<sub>a</sub>). The toxicity (acute) endpoint for *Pimephales promelas* is the 96-hr. LC<sub>50</sub> result reported in acute toxic units (TU<sub>a</sub>).

[3] Report the LC<sub>50</sub> value determined in [2] for the corresponding species. These values are the ones that need to be reported on the discharge monitoring report (DMR).

[4] These values do not represent effluent limitations, but rather exceedance of these values results in a demonstration of toxicity that triggers additional action and reporting by the permittee.

[5] If the toxicity result (in TUs) is less than or equal to the compliance limit, report "Pass". If the toxicity result (in TUs) exceeds the compliance limit, report "Fail".

f. Demonstration of Toxicity

- (1) Outfall 002: Toxicity (acute) will be demonstrated if the effluent is observed to have exceeded 9.1 TU<sub>a</sub> (acute toxic units) in 48 hours for *Ceriodaphnia dubia*, 48 hours for *Daphnia pulex*, 48 hours for *Daphnia magna*, or 96 hours for *Pimephales promelas*. For the purpose of selecting test concentrations under Part I.D.1.b.(3), the effluent concentration associated with acute toxicity is 11%.
- (2) Outfall 006: Toxicity (acute) will be demonstrated if the effluent is observed to have exceeded 1.0 TU<sub>a</sub> (acute toxic units) in 48 hours for *Ceriodaphnia dubia*, 48 hours for *Daphnia pulex*, 48 hours for *Daphnia magna*, or 96 hours for *Pimephales*



*promelas*. For the purpose of selecting test concentrations under Part I.D.1.b.(3), the effluent concentration associated with acute toxicity is 100%.

- (3) If toxicity (acute) is demonstrated in any of the tests specified above, a repeat acute toxicity test using the procedures in Part I.D.1.b.(3) of this permit and the same test species must be initiated within two (2) weeks of acute toxicity test failure. During the sampling for any repeat tests, the permittee must also collect and preserve sufficient effluent samples for use in any toxicity identification evaluation (TIE) and/or toxicity reduction evaluation (TRE), if necessary.
- (4) If any two (2) consecutive acute toxicity tests, including any and all repeat tests, demonstrate acute toxicity, the permittee must notify the Compliance Data Section under Part I.D.1.e. within 30 days of the date of termination of the second test, and begin the implementation of a toxicity reduction evaluation (TRE) as described in Part I.D.2. After receiving notification from the permittee, the Compliance Data Section will suspend the whole effluent toxicity testing requirements in Part I.D.1. for the term of the TRE compliance schedule.

g. Definitions

“Acute toxic unit” or “TUa” is defined as  $100/LC_{50}$  where the  $LC_{50}$  is expressed as a percent effluent in the test medium of an acute whole effluent toxicity (WET) test that is statistically or graphically estimated to be lethal to fifty percent (50%) of the test organisms.

2. Toxicity Reduction Evaluation (TRE) Schedule of Compliance

The development and implementation of a TRE is only required if toxicity is demonstrated in two (2) consecutive tests as described in Part I.D.1.f.(3). The post-TRE toxicity testing requirements in Part I.D.2.c. must also be completed as part of the TRE compliance schedule.

Milestone Dates: See a. through e. below for more detail on the TRE milestone dates.

<b>Requirement</b>	<b>Deadline</b>
Development and Submittal of a TRE Plan	Within 90 days of the date of two (2) consecutive failed toxicity tests.
Initiate a TRE Study	Within 30 days of TRE Plan submittal.
Submit TRE Progress Reports	Every 90 days beginning six (6) months from the date of two (2) consecutive failed toxicity tests.
Post-TRE Toxicity Testing Requirements	Immediately upon completion of the TRE, conduct three (3) consecutive months of toxicity tests with all three (3) test species; if no acute toxicity is shown with any test species, reduce toxicity tests to once every six (6) months for the remainder of the permit term. If post-TRE toxicity testing demonstrates toxicity, continue the TRE study.
Submit Final TRE Report	Within 90 days of successfully completing the TRE (including the post-TRE toxicity testing requirements), not to exceed three (3) years from the date that toxicity is initially demonstrated in two (2) consecutive toxicity tests.

a. Development of TRE Plan

Within 90 days of the date of two (2) consecutive failed toxicity tests (i.e. the date of termination of the second test), the permittee must submit plans for an effluent TRE to the Compliance Data Section. The TRE plan must include appropriate measures to characterize the causative toxicants and reduce toxicity in the effluent discharge to levels that demonstrate no toxicity with any test species as described in Part I.D.1.f. Guidance on conducting effluent toxicity reduction evaluations is available from EPA and from the EPA publications listed below:

(1) Methods for Aquatic Toxicity Identification Evaluations:

Phase I Toxicity Characterization Procedures, Second Edition (EPA/600/6-91/003), February 1991.

Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity (EPA/600/R-92/080), September 1993.

Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity (EPA/600/R-92/081), September 1993.

- (2) Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs) (EPA/600/2-88/070), April 1989.
- (3) Clarifications Regarding Toxicity Reduction and Identification Evaluations in the National Pollutant Discharge Elimination System Program, U.S. EPA, March 27, 2001.

b. Conduct the TRE

Within 30 days after submittal of the TRE plan to the Compliance Data Section, the permittee must initiate the TRE consistent with the TRE plan.

c. Post-TRE Toxicity Testing Requirements

- (1) After completing the TRE, the permittee must conduct monthly post-TRE toxicity tests with the three (3) test species *Ceriodaphnia dubia*, *Daphnia pulex* and fathead minnow (*Pimephales promelas*) for a period of three (3) consecutive months. *Daphnia magna* may be substituted for *Daphnia pulex*.
- (2) If the three (3) monthly tests demonstrate no toxicity with any test species as described in Part I.D.1.f.(1), the TRE will be considered successful. Otherwise, the TRE study must be continued.
- (3) The post-TRE toxicity tests must be conducted in accordance with the procedures in Part I.D.1. The results of these tests must be submitted as part of the final TRE Report required under Part I.D.2.d.
- (4) After successful completion of the TRE, the permittee must resume the acute toxicity tests required in Part I.[\*].1. The permittee may reduce the number of species tested to only include the species demonstrated to be most sensitive to the toxicity in the effluent. The established starting date for the frequency in Part I.D.1.d. is the first day of the first month following successful completion of the post-TRE toxicity tests.

d. Reporting

- (1) Progress reports must be submitted every 90 days to the Compliance Data Section beginning six (6) months from the date of two (2) consecutive failed toxicity tests. Each TRE progress report must include a listing of proposed activities for

the next quarter and a schedule to reduce toxicity in the effluent discharge to acceptable levels through control of the toxicant source or treatment of whole effluent.

- (2) Within 90 days of successfully completing the TRE, including the three (3) consecutive monthly tests required as part of the post-TRE toxicity testing requirements in Part I.D.2.c., the permittee must submit to the Compliance Data Section a final TRE Report that includes the following:
  - (A) A discussion of the TRE results;
  - (B) The starting date established under Part I.D.2.c.(4) for the continuation of the toxicity testing required in Part I.D.1.; and
  - (C) If applicable, the intent to reduce the number of species tested to the one most sensitive to the toxicity in the effluent under Part I.D.2.c.(4).

e. Compliance Date

The permittee must complete items a., b., c. and d. from Part I.D.2. and reduce toxicity in the effluent discharge to acceptable levels as soon as possible, but no later than three (3) years from the date that toxicity is initially demonstrated in two (2) consecutive toxicity tests (i.e. the date of termination of the second test) as described in Part I.D.1.f.(3).

E. REOPENING CLAUSES

This permit may be modified, or alternately, revoked and reissued, after public notice and opportunity for hearing:

1. to comply with any applicable effluent limitation or standard issued or approved under 301(b)(2)(C),(D) and (E), 304 (b)(2), and 307(a)(2) of the Clean Water Act, if the effluent limitation or standard so issued or approved:
  - a. contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
  - b. controls any pollutant not limited in the permit.
2. for any of the causes listed under 327 IAC 5-2-16.
3. to include whole effluent toxicity limitations or to include limitations for specific toxicants if the results of the biomonitoring and/or the TRE study

indicate that such limitations are necessary to meet Indiana Water Quality Standards.

4. to include a case-specific Limit of Detection (LOD) and/or Limit of Quantitation (LOQ). The permittee must demonstrate that such action is warranted in accordance with the procedures specified under Appendix B, 40 CFR Part 136, using the most sensitive analytical methods approved by EPA under 40 CFR Part 136, or approved by the Commissioner.
5. to comply with any applicable standards, regulations and requirements issued or approved under section 316(b) of the Clean Water Act.
6. to specify the use of a different analytical method if a more sensitive analytical method has been specified in or approved under 40 CFR 136 or approved by the Commissioner to monitor for the presence and amount in the effluent of the pollutant for which the WQBEL is established. The permit shall specify the LOD and LOQ that can be achieved by use of the specified analytical method.
7. to incorporate a requirement that the permittee develop and implement a Fresh Water Mussel Augmentation Plan consistent with the U.S. Fish and Wildlife Service (USFWS) Recommendations under Section 6.3.6. and Appendix B of the Fact Sheet if: (1) the permittee does not contribute \$33,333.33 (permittee's original allocated share) to the Indiana Freshwater Mussel Augmentation Plan project (the Project), within six months of the effective date of the permit as required by Part IV.B.8 of this permit; (2) if required by Part IV.B.8 of this permit, the permittee does not contribute an additional sum, as calculated by USFWS, within six months of the date that this amount has been provided to the permittee, after implementation of the Project if additional work is needed to meet the Project's success criteria (the additional sum shall be no more than 25% of the permittee's original allocated share); or (3) if IDEM does not receive sufficient funds for the group Project by December 1, 2024. If the permit is modified to require an individual project after the permittee has submitted its original allocated share, any funds submitted by the permittee will be refunded without interest on or after the date the permit modification is effective.

If the permittee is required to develop and implement a freshwater mussel augmentation project, it would include, at a minimum, the following components: Administrative and Permitting, Brood Stock Acquisition, Propagation effort, Quantitative Processing (tagging), Release Site Reconnaissance Habitat Assessment, and Monitoring augmentation site(s). Each step should be well documented and the documentation available to the public at the appropriate point. More specifically, these components would include the following:

*Administrative and Permitting*

There will be planning, permitting, coordination with Indiana biologists, federal agency biologists, and also hatchery propagation specialists.

*Brood Stock Acquisition*

Brood stock acquisition is a necessary step in the augmentation process. This can be accomplished in various ways, but the key is coordination with Indiana biologists, federal agency biologists, and also hatchery propagation specialists. Networking within this growing community of practice will be key to accomplishing this task.

*Propagation*

Propagation in a laboratory / hatchery should be done by experienced qualified facilities that have routinely worked with rare mussels. A suitable grow out period of likely 3 plus years is expected. They have to be of a sufficient size in order to be tagged. This also gives them a greater chance of living to reproductive maturity.

*Quantitative Processing*

After a sufficient period of growing out juvenile mussels, an effort to tag mussels so that they can be monitored is important. This involves using adhesives and pit tags and the acquisition of the equipment needed to detect pit tags.

*Release Site Reconnaissance Habitat Assessment*

Some reconnaissance and habitat assessment should be undertaken in the planning phase of this project so that returning grown out, pit tagged Sheepsnose to the Ohio River environs can be optimized for success.

*Monitoring Augmentation Sites*

Monitoring mussel augmentation sites should take place a year after and two years after mussels have been placed in the Ohio River environs. As previously mentioned, these monitoring efforts should be well documented to allow the U.S. Fish and Wildlife Service to evaluate the success of augmentation of sheepsnose mussels as a measure to minimize take associated with the permittee's facility on the Ohio River.

## PART II

### STANDARD CONDITIONS FOR NPDES PERMITS

#### A. GENERAL CONDITIONS

##### 1. Duty to Comply

The permittee shall comply with all terms and conditions of this permit in accordance with 327 IAC 5-2-8(1) and all other requirements of 327 IAC 5-2-8. Any permit noncompliance constitutes a violation of the Clean Water Act and IC 13 and is grounds for enforcement action or permit termination, revocation and reissuance, modification, or denial of a permit renewal application.

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

##### 2. Duty to Mitigate

In accordance with 327 IAC 5-2-8(3), the permittee shall take all reasonable steps to minimize or correct any adverse impact to the environment resulting from noncompliance with this permit. During periods of noncompliance, the permittee shall conduct such accelerated or additional monitoring for the affected parameters, as appropriate or as requested by IDEM, to determine the nature and impact of the noncompliance.

##### 3. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must obtain and submit an application for renewal of this permit in accordance with 327 IAC 5-2-8(2). It is the permittee's responsibility to obtain and submit the application. In accordance with 327 IAC 5-2-3(c), the owner of the facility or operation from which a discharge of pollutants occurs is responsible for applying for and obtaining the NPDES permit, except where the facility or operation is operated by a person other than an employee of the owner in which case it is the operator's responsibility to apply for and obtain the permit. Pursuant to 327 IAC 5-3-2(a)(2), the application must be submitted at least 180 days before the expiration date of this permit. This deadline may be extended if all of the following occur:

- a. permission is requested in writing before such deadline;
- b. IDEM grants permission to submit the application after the deadline; and
- c. the application is received no later than the permit expiration date.

#### 4. Permit Transfers

In accordance with 327 IAC 5-2-8(4)(D), this permit is nontransferable to any person except in accordance with 327 IAC 5-2-6(c). This permit may be transferred to another person by the permittee, without modification or revocation and reissuance being required under 327 IAC 5-2-16(c)(1) or 16(e)(4), if the following occurs:

- a. the current permittee notified the Commissioner at least thirty (30) days in advance of the proposed transfer date;
- b. a written agreement containing a specific date of transfer of permit responsibility and coverage between the current permittee and the transferee (including acknowledgment that the existing permittee is liable for violations up to that date, and the transferee is liable for violations from that date on) is submitted to the Commissioner;
- c. the transferee certifies in writing to the Commissioner their intent to operate the facility without making such material and substantial alterations or additions to the facility as would significantly change the nature or quantities of pollutants discharged and thus constitute cause for permit modification under 327 IAC 5-2-16(d). However, the Commissioner may allow a temporary transfer of the permit without permit modification for good cause, e.g., to enable the transferee to purge and empty the facility's treatment system prior to making alterations, despite the transferee's intent to make such material and substantial alterations or additions to the facility; and
- d. the Commissioner, within thirty (30) days, does not notify the current permittee and the transferee of the intent to modify, revoke and reissue, or terminate the permit and to require that a new application be filed rather than agreeing to the transfer of the permit.

The Commissioner may require modification or revocation and reissuance of the permit to identify the new permittee and incorporate such other requirements as may be necessary under the Clean Water Act or state law.

#### 5. Permit Actions

- a. In accordance with 327 IAC 5-2-16(b) and 327 IAC 5-2-8(4), this permit may be modified, revoked and reissued, or terminated for cause, including, but not limited to, the following:
  - (1) Violation of any terms or conditions of this permit;
  - (2) Failure of the permittee to disclose fully all relevant facts or misrepresentation of any relevant facts in the application, or during the permit issuance process; or



- (3) A change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge controlled by the permit, e.g., plant closure, termination of discharge by connection to a POTW, a change in state law that requires the reduction or elimination of the discharge, or information indicating that the permitted discharge poses a substantial threat to human health or welfare.
- b. Filing of either of the following items does not stay or suspend any permit condition: (1) a request by the permittee for a permit modification, revocation and reissuance, or termination, or (2) submittal of information specified in Part II.A.3 of the permit including planned changes or anticipated noncompliance.

The permittee shall submit any information that the permittee knows or has reason to believe would constitute cause for modification or revocation and reissuance of the permit at the earliest time such information becomes available, such as plans for physical alterations or additions to the permitted facility that:

- (1) could significantly change the nature of, or increase the quantity of pollutants discharged; or
- (2) the commissioner may request to evaluate whether such cause exists.
- c. In accordance with 327 IAC 5-1-3(a)(5), the permittee must also provide any information reasonably requested by the Commissioner.

## 6. Property Rights

Pursuant to 327 IAC 5-2-8(6) and 327 IAC 5-2-5(b), the issuance of this permit does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to persons or private property or invasion of other private rights, any infringement of federal, state, or local laws or regulations. The issuance of the permit also does not preempt any duty to obtain any other state, or local assent required by law for the discharge or for the construction or operation of the facility from which a discharge is made.

## 7. Severability

In accordance with 327 IAC 1-1-3, the provisions of this permit are severable and, if any provision of this permit or the application of any provision of this permit to any person or circumstance is held invalid, the invalidity shall not affect any other provisions or applications of the permit which can be given effect without the invalid provision or application.

8. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 of the Clean Water Act.

9. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Clean Water Act or state law.

10. Penalties for Violation of Permit Conditions

Pursuant to IC 13-30-4, a person who violates any provision of this permit, the water pollution control laws; environmental management laws; or a rule or standard adopted by the Environmental Rules Board is liable for a civil penalty not to exceed twenty-five thousand dollars (\$25,000) per day of any violation.

Pursuant to IC 13-30-5, a person who obstructs, delays, resists, prevents, or interferes with (1) the department; or (2) the department's personnel or designated agent in the performance of an inspection or investigation performed under IC 13-14-2-2 commits a class C infraction.

Pursuant to IC 13-30-10-1.5(e), a person who willfully or negligently violates any NPDES permit condition or filing requirement, or any applicable standards or limitations of IC 13-18-3-2.4, IC 13-18-4-5, IC 13-18-12, IC 13-18-14, IC 13-18-15, or IC 13-18-16, commits a Class A misdemeanor.

Pursuant to IC 13-30-10-1.5(i), an offense under IC 13-30-10-1.5(e) is a Level 4 felony if the person knowingly commits the offense and knows that the commission of the offense places another person in imminent danger of death or serious bodily injury. The offense becomes a Level 3 felony if it results in serious bodily injury to any person, and a Level 2 felony if it results in death to any person.

Pursuant to IC 13-30-10-1.5(g), a person who willfully or recklessly violates any applicable standards or limitations of IC 13-18-8 commits a Class B misdemeanor.

Pursuant to IC 13-30-10-1.5(h), a person who willfully or recklessly violates any applicable standards or limitations of IC 13-18-9, IC 13-18-10, or IC 13-18-10.5 commits a Class C misdemeanor.

Pursuant to IC 13-30-10-1, a person who knowingly or intentionally makes any false material statement, representation, or certification in any NPDES form, notice, or report commits a Class B misdemeanor.

11. Penalties for Tampering or Falsification

In accordance with 327 IAC 5-2-8(10), the permittee shall comply with monitoring, recording, and reporting requirements of this permit. The Clean Water Act, as well as IC 13-30-10-1, provides that any person who knowingly or intentionally (a) destroys, alters, conceals, or falsely certifies a record, (b) tampers with, falsifies, or renders inaccurate or inoperative a recording or monitoring device or method, including the data gathered from the device or method, or (c) makes a false material statement or representation in any label, manifest, record, report, or other document; all required to be maintained under the terms of a permit issued by the department commits a Class B misdemeanor.

12. Toxic Pollutants

If any applicable effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Clean Water Act for a toxic pollutant injurious to human health, and that standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition in accordance with 327 IAC 5-2-8(5). Effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants injurious to human health are effective and must be complied with, if applicable to the permittee, within the time provided in the implementing regulations, even absent permit modification.

13. Wastewater treatment plant and certified operators

The permittee shall have the wastewater treatment facilities under the responsible charge of an operator certified by the Commissioner in a classification corresponding to the classification of the wastewater treatment plant as required by IC 13-18-11-11 and 327 IAC 5-22. In order to operate a wastewater treatment plant the operator shall have qualifications as established in 327 IAC 5-22-7.

327 IAC 5-22-10.5(a) provides that a certified operator may be designated as being in responsible charge of more than one (1) wastewater treatment plant, if it can be shown that he will give adequate supervision to all units involved. Adequate supervision means that sufficient time is spent at the plant on a regular basis to assure that the certified operator is knowledgeable of the actual operations and that test reports and results are representative of the actual operations conditions. In accordance with 327 IAC 5-22-3(11), "responsible charge operator" means the person responsible for the overall daily operation, supervision, or management of a wastewater facility.

Pursuant to 327 IAC 5-22-10(4), the permittee shall notify IDEM when there is a change of the person serving as the certified operator in responsible charge of the wastewater treatment facility. The notification shall be made no later than thirty (30) days after a change in the operator.

14. Construction Permit

In accordance with IC 13-14-8-11.6, a discharger is not required to obtain a state permit for the modification or construction of a water pollution treatment or control facility if the discharger has an effective NPDES permit.

If the discharger modifies their existing water pollution treatment or control facility or constructs a new water pollution treatment or control facility for the treatment or control of any new influent pollutant or increased levels of any existing pollutant, then, within thirty (30) days after commencement of operation, the discharger shall file with the Department of Environment Management a notice of installation for the additional pollutant control equipment and a design summary of any modifications.

The notice and design summary shall be sent to the Office of Water Quality, Industrial NPDES Permits Section, 100 North Senate Avenue, Indianapolis, IN 46204-2251.

15. Inspection and Entry

In accordance with 327 IAC 5-2-8(8), the permittee shall allow the Commissioner, or an authorized representative, (including an authorized contractor acting as a representative of the Commissioner) upon the presentation of credentials and other documents as may be required by law, to:

- a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept pursuant to the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the terms and conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment or methods (including monitoring and control equipment), practices, or operations regulated or required pursuant to this permit; and
- d. Sample or monitor at reasonable times, any discharge of pollutants or internal wastestreams for the purposes of evaluating compliance with the permit or as otherwise authorized.

16. New or Increased Discharge of Pollutants

This permit prohibits the permittee from undertaking any action that would result in a new or increased discharge of a bioaccumulative chemical of concern (BCC) or a new or increased permit limit for a regulated pollutant that is not a BCC unless one of the following is completed prior to the commencement of the action:

- a. Information is submitted to the Commissioner demonstrating that the proposed new or increased discharges will not cause a significant lowering of water quality as defined under 327 IAC 2-1.3-2(50). Upon review of this information, the Commissioner may request additional information or may determine that the proposed increase is a significant lowering of water quality and require the submittal of an antidegradation demonstration.
- b. An antidegradation demonstration is submitted to and approved by the Commissioner in accordance with 327 IAC 2-1.3-5 and 327 IAC 2-1.3-6.

B. MANAGEMENT REQUIREMENTS

1. Proper Operation and Maintenance

The permittee shall at all times maintain in good working order and efficiently operate all facilities and systems (and related appurtenances) for the collection and treatment which are installed or used by the permittee and which are necessary for achieving compliance with the terms and conditions of this permit in accordance with 327 IAC 5-2-8(9).

Neither 327 IAC 5-2-8(9), nor this provision, shall be construed to require the operation of installed treatment facilities that are unnecessary for achieving compliance with the terms and conditions of the permit.

2. Bypass of Treatment Facilities

Pursuant to 327 IAC 5-2-8(12), the following are requirements for bypass:

- a. The following definitions:
  - (1) "Bypass" means the intentional diversion of a waste stream from any portion of a treatment facility.
  - (2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

- b. The permittee may allow a bypass to occur that does not cause a violation of the effluent limitations contained in this permit, but only if it is also for essential maintenance to assure efficient operation. These bypasses are not subject to Part II.B.2.c. and d.
- c. The permittee must provide the Commissioner with the following notice:
  - (1) If the permittee knows or should have known in advance of the need for a bypass (anticipated bypass), it shall submit prior written notice. If possible, such notice shall be provided at least ten (10) days before the date of the bypass for approval by the Commissioner.
  - (2) As required by 327 IAC 5-2-8(11)(C), the permittee shall orally report an unanticipated bypass that exceeds any effluent limitations in the permit within twenty-four (24) hours from the time the permittee becomes aware of such noncompliance. A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; and if the cause of noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate and prevent recurrence of the noncompliance. If a complete report is submitted by e-mail within 24 hours of the noncompliance, then that e-mail report will satisfy both the oral and written reporting requirement. E-mails should be sent to [wwreports@idem.in.gov](mailto:wwreports@idem.in.gov).
- d. The following provisions are applicable to bypasses:
  - (1) Except as provided by Part II.B.2.b., bypass is prohibited, and the Commissioner may take enforcement action against a permittee for bypass, unless the following occur:
    - (A) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage.
    - (B) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment down time. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance.

- (C) The permittee submitted notices as required under Part II.B.2.c.
- (2) The Commissioner may approve an anticipated bypass, after considering its adverse effects, if the Commissioner determines that it will meet the conditions listed above in Part II.B.2.d.(1). The Commissioner may impose any conditions determined to be necessary to minimize any adverse effects.
- e. Bypasses that result in death or acute injury or illness to animals or humans must be reported in accordance with the "Spill Response and Reporting Requirements" in 327 IAC 2-6.1, including calling 888/233-7745 as soon as possible, but within two (2) hours of discovery. However, under 327 IAC 2-6.1-3(1), when the constituents of the bypass are regulated by this permit, and death or acute injury or illness to animals or humans does not occur, the reporting requirements of 327 IAC 2-6.1 do not apply.

3. Upset Conditions

Pursuant to 327 IAC 5-2-8(13):

- a. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- b. An upset shall constitute an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Paragraph c of this section, are met.
- c. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence, that:
  - (1) An upset occurred and the permittee has identified the specific cause(s) of the upset;
  - (2) The permitted facility was at the time being properly operated;
  - (3) The permittee complied with any remedial measures required under Part II.A.2; and

- (4) The permittee submitted notice of the upset as required in the "Twenty-Four Hour Reporting Requirements," Part II.C.3, or 327 IAC 2-6.1, whichever is applicable. However, under 327 IAC 2-6.1-3(1), when the constituents of the discharge are regulated by this permit, and death or acute injury or illness to animals or humans does not occur, the reporting requirements of 327 IAC 2-6.1 do not apply.

- d. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof pursuant to 40 CFR 122.41(n)(4).

4. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed from or resulting from treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the State and to be in compliance with all Indiana statutes and regulations relative to liquid and/or solid waste disposal. The discharge of pollutants in treated wastewater is allowed in compliance with the applicable effluent limitations in Part I. of this permit.

C. REPORTING REQUIREMENTS

1. Planned Changes in Facility or Discharge

Pursuant to 327 IAC 5-2-8(11)(F), the permittee shall give notice to the Commissioner as soon as possible of any planned physical alterations or additions to the permitted facility. In this context, permitted facility refers to a point source discharge, not a wastewater treatment facility. Notice is required only when either of the following applies:

- a. The alteration or addition may meet one of the criteria for determining whether the facility is a new source as defined in 327 IAC 5-1.5.
- b. The alteration or addition could significantly change the nature of, or increase the quantity of, pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in Part I.A. nor to notification requirements in Part II.C.9. of this permit.

Following such notice, the permit may be modified to revise existing pollutant limitations and/or to specify and limit any pollutants not previously limited.



2. Monitoring Reports

Pursuant to 327 IAC 5-2-8(10) and 327 IAC 5-2-13 through 15, monitoring results shall be reported at the intervals and in the form specified in "Monthly Reporting", Part I.C.2.

3. Twenty-Four Hour Reporting Requirements

Pursuant to 327 IAC 5-2-8(11)(C), the permittee shall orally report to the Commissioner information on the following types of noncompliance within 24 hours from the time permittee becomes aware of such noncompliance. If the noncompliance meets the requirements of item b (Part II.C.3.b) or 327 IAC 2-6.1, then the report shall be made within those prescribed time frames. However, under 327 IAC 2-6.1-3(1), when the constituents of the discharge that is in noncompliance are regulated by this permit, and death or acute injury or illness to animals or humans does not occur, the reporting requirements of 327 IAC 2-6.1 do not apply.

- a. Any unanticipated bypass which exceeds any effluent limitation in the permit;
- b. Any noncompliance which may pose a significant danger to human health or the environment. Reports under this item shall be made as soon as the permittee becomes aware of the noncomplying circumstances;
- c. Any upset (as defined in Part II.B.3 above) that causes an exceedance of any effluent limitation in the permit; or
- d. Violation of a maximum daily discharge limitation for any of the following toxic pollutants or hazardous substances:

Acenaphthene, Acrylonitrile, Benzene, Carbon Tetrachloride, Chlorobenzene, Hexachlorobenzene, 1,2,4-Trichlorobenzene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Chloroethane, 1,1-Dichloroethane, 1,2-Dichloroethane, Hexachloroethane, 2-Chlorophenol, 2,4-Dichlorophenol, Chloroform, Total Chromium, Copper, Total Cyanide, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,1-Dichloroethylene, 1,2-trans-Dichloroethylene, 1,2-Dichloropropane, 1,3-Dichloropropylene, 2,4-Dimethylphenol, 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, Ethylbenzene, Fluoranthene, Methyl Chloride, Methylene chloride, Hexachlorobutadiene, Hexachloroethane, Lead, Mercury, Naphthalene, Nickel, Nitrobenzene, 2-Nitrophenol, 4-Nitrophenol, 2,4-Dinitrophenol, 4,6-Dinitro-o-cresol, Acenaphthylene, Anthracene, Phenol, Pyrene, Fluorene, Phenanthrene, Di-n-butyl phthalate,

Diethyl phthalate, Dimethyl phthalate, Bis(2-ethylhexyl)phthalate, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(k)fluoranthene, 3,4-Benzofluoranthene, Chrysene, Toluene, Tetrachloroethylene, Trichloroethylene, Vinyl Chloride, and Zinc.

The permittee can make the oral reports by calling (317)232-8670 during regular business hours and asking for the Compliance Data Section or by calling (317) 233-7745 ((888)233-7745 toll free in Indiana) during non-business hours. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce and eliminate the noncompliance and prevent its recurrence. The Commissioner may waive the written report on a case-by-case basis if the oral report has been received within 24 hours. Alternatively, the permittee may submit a "Bypass/Overflow Report" (State Form 48373) or a "Noncompliance 24-Hour Notification Report" (State Form 52415), whichever is appropriate, to IDEM at (317) 232-8637 or [wwreports@idem.in.gov](mailto:wwreports@idem.in.gov). If a complete e-mail submittal is sent within 24 hours of the time that the permittee became aware of the occurrence, then the email report will satisfy both the oral and written reporting requirements.

4. Other Compliance/Noncompliance Reporting

Pursuant to 327 IAC 5-2-8(11)(D), the permittee shall report any instance of noncompliance not reported under the "Twenty-Four Hour Reporting Requirements" in Part II.C.3, or any compliance schedules at the time the pertinent Discharge Monitoring Report is submitted. The report shall contain the information specified in Part II.C.3;

The permittee shall also give advance notice to the Commissioner of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements; and

All reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

5. Other Information

Pursuant to 327 IAC 5-2-8(11)(E), where the permittee becomes aware of a failure to submit any relevant facts or submitted incorrect information in a permit application or in any report, the permittee shall promptly submit such facts or corrected information to the Commissioner.

6. Signatory Requirements

Pursuant to 327 IAC 5-2-22 and 327 IAC 5-2-8(15):

a. All reports required by the permit and other information requested by the Commissioner shall be signed and certified by a person described below or by a duly authorized representative of that person:

- (1) For a corporation: by a responsible corporate officer. A “responsible corporate officer” means either of the following:
  - (A) A president, secretary, treasurer, any vice president of the corporation in charge of a principal business function, or any other person who performs similar policymaking or decision making functions for the corporation; or
  - (B) The manager of one (1) or more manufacturing, production, or operating facilities provided the manager is authorized to make management decisions that govern the operation of the regulated facility including having the explicit or implicit duty to make major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
- (2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
- (3) For a Federal, State, or local governmental body or any agency or political subdivision thereof: by either a principal executive officer or ranking elected official.

b. A person is a duly authorized representative only if:

- (1) The authorization is made in writing by a person described above.

- (2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and
  - (3) The authorization is submitted to the Commissioner.
- c. **Electronic Signatures.** If documents described in this section are submitted electronically by or on behalf of the NPDES-regulated facility, any person providing the electronic signature for such documents shall meet all relevant requirements of this section, and shall ensure that all of the relevant requirements of 40 CFR part 3 (including, in all cases, subpart D to part 3) (Cross-Media Electronic Reporting) and 40 CFR part 127 (NPDES Electronic Reporting Requirements) are met for that submission.
  - d. **Certification.** Any person signing a document identified under Part II.C.6., shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

7. Availability of Reports

Except for data determined to be confidential under 327 IAC 12.1, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Indiana Department of Environmental Management and the Regional Administrator. As required by the Clean Water Act, permit applications, permits, and effluent data shall not be considered confidential.

8. Penalties for Falsification of Reports

IC 13-30 and 327 IAC 5-2-8(15) provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance, shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 180 days per violation, or by both.

9. Changes in Discharge of Toxic Substances

Pursuant to 327 IAC 5-2-9, the permittee shall notify the Commissioner as soon as it knows or has reason to know:

- a. That any activity has occurred or will occur which would result in the discharge of any toxic pollutant that is not limited in the permit if that discharge will exceed the highest of the following notification levels.
  - (1) One hundred micrograms per liter (100 µg/l);
  - (2) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
  - (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
  - (4) A notification level established by the Commissioner on a case-by-case basis, either at the Commissioner's own initiative or upon a petition by the permittee. This notification level may exceed the level specified in subdivisions (1), (2), or (3) but may not exceed the level which can be achieved by the technology-based treatment requirements applicable to the permittee under the CWA (see 327 IAC 5-5-2).
- b. That it has begun or expects to begin to use or manufacture, as an intermediate or final product or byproduct, any toxic pollutant that was not reported in the permit application under 40 CFR 122.21(g)(9). However, this subsection b. does not apply to the permittee's use or manufacture of a toxic pollutant solely under research or laboratory conditions.

10. Future Electronic Reporting Requirements

IDEM is currently developing the technology and infrastructure necessary to allow compliance with the EPA Phase 2 e-reporting requirements per 40 CFR 127.16 and to allow electronic reporting of applications, notices, plans, reports, and other information not covered by the federal e-reporting regulations. IDEM will notify the permittee when IDEM's e-reporting system is ready for use for one or more applications, notices, plans, reports, or other information. This IDEM notice will identify the specific applications, notices, plans, reports, or other information that are to be submitted electronically and the permittee will be required to use the IDEM electronic reporting system to submit the identified application(s), notice(s), plan(s), report(s), or other information. See Part I.C.2. of this permit for the current electronic reporting requirements for the submittal of monthly monitoring reports such as the Discharge Monitoring Report (DMR) and the Monthly Monitoring Report (MMR).

PART III  
Best Management Practices (BMP) Plan Requirements

A. Applicability

In accordance with 327 IAC 5-9-2, dischargers who use, manufacture, store, handle, or discharge any pollutant listed as toxic under Section 307(a)(1) of the CWA, any pollutant listed as hazardous under Section 311 of the CWA, or on a case-by-case basis, other materials which may cause pollution if they are discharged, are subject to the requirements of this rule for all activities which may result in significant amounts of those pollutants reaching waters of the state.

B. Implementation

During the term of this permit, the permittee shall operate the facility in accordance with the current BMP Plan or in accordance with subsequent amendments to the plan.

C. BMP Plan Amendments

1. In accordance with 327 IAC 5-9-2(i), the permittee shall amend the BMP Plan whenever there is a change in facility design, construction operation, or maintenance with materially affects the facility's potential for discharge of significant amounts of toxic or hazardous pollutants into waters of the state. Additionally, if any components of the Plan, or subsequent amendments to the Plan, prove to be ineffective in achieving the objectives of the Plan, the permittee shall continue to amend the Plan until those objectives are achieved.
2. Amendments affecting the permittee's NPDES permit obligations shall be submitted to the OWQ for approval in accordance with 327 IAC 5-9-2(g). Amendments to the Plan shall be implemented within six (6) months of approval unless a later date is approved by the OWQ.

D. Objectives Amendments to the Plan shall:

1. Be documented in narrative form, and shall include any necessary updates of plot plans, drawings, or maps.
  - a. Each facility component or system shall be reexamined for its potential for causing a release or significant amounts of toxic or hazardous pollutants to state waters due to equipment failure, improper operation, natural phenomena such as rain or snowfall, etc.

- b. Where experience indicated a reasonable potential for equipment failure (e.g., tank overflow or leakage), natural condition (e.g., precipitation), or other circumstances to result in significant amounts of toxic or hazardous pollutants reaching surface waters, the BMP plan reevaluation should include a prediction of the direction, rate of flow, and total quantity of toxic or hazardous pollutants which would be discharged from the facility as a result of each condition or circumstance.
  2. Establish specific best management practices to meet the objectives identified under paragraph a. of this section, addressing each component or system capable of causing a release of significant amounts of toxic or hazardous pollutants to waters of the state.
  3. Include a review of any special conditions established in this section.
  4. Be reviewed by plant engineering staff and the plant manager.
- E. Specific Requirements

Amendments to the Plan shall be consistent with the general guidance contained in the publication entitled "Guidance Manual for Developing Best Management Practices (BMP)" and shall address the following points for ancillary activities:

1. Statement of policy,
2. Spill control committee,
3. Material inventory,
4. Material compatibility,
5. Employee training,
6. Reporting and notification procedures,
7. Visual Inspections,
8. Preventative maintenance,
9. Housekeeping, and
10. Security.

F. SPCC Plans

Amendments to the Plan may reflect requirements for Spill Prevention Control and Countermeasure (SPCC) plans under Section 311 of the Clean Water Act and 40 CFR 151 and may incorporate any part of such plans into the amended Plan by reference.



G. Hazardous Waste Management

The permittee shall assure the proper management of solid and hazardous waste in accordance with regulations promulgated under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (RCRA)(40U.S.C. 6901 et seq.).

H. Documentation

The permittee shall maintain a description of the Plan, including all amendments required under this Part, at the facility and shall make the Plan available to the Commissioner upon request.

I. Specific Conditions

The permittee shall review the following specific conditions in the BMP Plan to ensure that the stated objectives are fulfilled:

1. Secondary containment with impervious surfaces of stored toxic pollutants including spent solvents,
2. Identification and control of chemicals which, if released into the environment, would be harmful,
3. Prevention of overflow of holding ponds during unusually heavy rainfall or snow events,
4. Prevention of the release of toxic or hazardous pollutants during transfer operations, and
5. Disposal of laboratory wastes which may contain priority or toxic pollutants in properly designated waste containers.

## Part IV Cooling Water Intake Structures

### A. Best Technology Available (BTA) Determination

Section 316(b) of the Clean Water Act requires that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available (BTA) for minimizing adverse environmental impact.

The EPA promulgated a CWA section 316(b) regulation on August 15, 2014, which became effective on October 14, 2014. 79 Fed. Reg. 48300-439 (August 15, 2014). This regulation established application requirements and standards for cooling water intake structures. The regulation is applicable to point sources with a cumulative design intake flow (DIF) greater than 2 MGD where 25% or more of the water withdrawn (using the actual intake flow (AIF)) is used exclusively for cooling purposes. All existing facilities subject to these regulations must submit the information required by 40 CFR 122.21(r)(2)–(r)(8) and facilities with an actual intake flow of greater than 125 MGD must also submit the information required by 40 CFR 122.21(r)(9)–(r)(13). The regulation establishes best technology available standards to reduce impingement and entrainment of aquatic organisms at existing power generation and manufacturing facilities.

Based on available information, IDEM has made best technology available (BTA) impingement and entrainment mortality determinations.

#### 1. Impingement Mortality BTA:

IDEM has determined that the facility is in compliance with 40 CFR 125.94(c)(1) by operating a closed cycle recirculating system (CCRS) as defined at 40 CFR §125.92(c).

In addition, IDEM has determined that the facility is in compliance with 40 CFR 125.94(c)(2) by operating a cooling water intake structure that has a maximum design through screen intake velocity of less than 0.5 fps.

#### 2. Entrainment Mortality BTA:

After considering all the factors that must and may be considered by the federal rules, IDEM has determined that the existing facility meets BTA for entrainment mortality since the facility utilizes a closed-cycle recirculating system (CCRS) that meets the definition of a CCRS under the federal rules.

This determination will be reassessed at the next permit reissuance to ensure that the CWISs continue to meet the requirements of Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326).

## B. Permit Requirements

The permittee shall comply with the following cooling water intake structure (CWIS) requirements:

1. In accordance with 40 CFR 125.98(b)(1), nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act.
2. The permittee must at all times properly operate and maintain the cooling water intake structure and associated intake equipment.
3. The permittee must inform IDEM of any proposed changes to the CWIS or proposed changes to operations at the facility that affect the information taken into account in the current BTA evaluation.
4. Any discharge of intake screen backwash must meet the minimum narrative limitations contained in Part I.B of the permit. There must be no discharge of debris from intake screen washing which will settle to form objectionable deposits which are in amounts sufficient to be unsightly or deleterious, or which will produce colors or odors constituting a nuisance.
5. The permittee must monitor the actual intake flow at a minimum frequency of daily. The monitoring must be representative of normal operating conditions. These data must be reported on the DMRs and MMRs. Further, the permittee shall submit an annual summary of the actual intake flows measured at a minimum frequency of daily.
6. The permittee must monitor and report its cycles of concentration at its cooling towers at a minimum frequency of daily. These data must be reported on the DMRs and MMRs. Further, the permittee shall submit an annual summary of the cycles of concentration measured at a minimum frequency of daily.
7. The permittee must either conduct visual inspections or employ remote monitoring devices to conduct inspections of its cooling water intake structure during the period the cooling water intake structure is in operation as required by 40 CFR 125.96(e). Except as specifically provided in this provision, the permittee must conduct such inspections at least weekly to ensure that any technologies operated to comply with 40 CFR 125.94, including its cooling towers, are maintained and operated to function as designed including those installed to protect Federally-listed threatened or endangered species or designated critical habitat. At least twice a year (January – June and July – December) the permittee must conduct a thorough cleaning and inspection of the intake structure screens by employing a dive team. Alternative procedures can be approved if this requirement is not feasible (e.g., an offshore intake, velocity cap, or during periods of inclement weather).

8. The permittee must contribute \$33,333.33 (permittee's original allocated share) to the Indiana Freshwater Mussel Augmentation Plan project (the Project), within six months of the effective date of the permit. If necessary, the permittee shall contribute an additional sum to the Project, as calculated by the U.S. Fish and Wildlife Service, not to exceed \$8,333.33, within six months of receiving written notice of the requirement for the additional contribution. This will be determined after implementation of the Project and if additional work is needed to meet the Project's success criteria. The permittee shall submit annual reports to IDEM by January 31 of each year detailing the payment(s) made (if any) to the Project in the preceding year.

Within 30 days of payment, documentation of the payment(s) shall be provided to the IDEM, Office of Water Quality, NPDES Permits Branch, Industrial NPDES Permit Section at [OWQWWPER@idem.in.gov](mailto:OWQWWPER@idem.in.gov) and the Compliance Branch at [wwReports@idem.in.gov](mailto:wwReports@idem.in.gov). Documentation must include a reference to the permit and permit condition.

9. In accordance with 40 CFR 125.97(c), by January 31 of each year, the permittee must submit to the Industrial NPDES Permit Section IDEM-OWQ an annual certification statement for the preceding calendar year signed by the responsible corporate officer as defined in 40 CFR 122.22 (see 327 IAC 5-2-22) subject to the following:
  - a. If the information contained in the previous year's annual certification is still pertinent, you may simply state as such in a letter to IDEM and the letter, along with any applicable data submission requirements specified in this section shall constitute the annual certification.
  - b. If you have substantially modified operation of any unit at your facility that impacts cooling water withdrawals or operation of your cooling water intake structures, you must provide a summary of those changes in the report. In addition, you must submit revisions to the information required at 40 CFR 122.21(r) in your next permit application.
10. BTA determinations for entrainment mortality and impingement mortality at cooling water intake structures will be made in each permit reissuance in accordance with 40 CFR 125.90-98. The permittee must submit all the information required by the applicable provisions of 40 CFR 122.21(r)(2) through (r)(8) with the next renewal application. Since the permittee has submitted the studies required by 40 CFR 122.21(r), the permittee may, in subsequent renewal applications pursuant to 40 CFR 125.95(c), request to reduce the information required if conditions at the facility and in the waterbody remain substantially unchanged since the previous application so long as the relevant previously submitted information remains representative of the current source water, intake structure, cooling water system, and operating conditions. Any habitat designated as critical or species listed as threatened or endangered after issuance of the current permit whose range of habitat or

designated critical habitat includes waters where a facility intake is located constitutes potential for a substantial change that must be addressed by the owner/operator in subsequent permit applications, unless the facility received an exemption pursuant to 16 U.S.C. 1536(o) or a permit pursuant to 16 U.S.C. 1539(a) or there is no reasonable expectation of take. The permittee must submit the request for reduced cooling water intake structure and waterbody application information at least **two years and six months** prior to the expiration of the NPDES permit. The request must identify each element in this subsection that it determines has not substantially changed since the previous permit application and the basis for the determination. IDEM has the discretion to accept or reject any part of the request.

11. The permittee must submit and maintain all the information required by the applicable provisions of 40 CFR 125.97.
12. The permittee must keep records of all submissions that are part of its permit application until the subsequent permit issued to document compliance with 40 CFR 125.95. If IDEM approves a request for reduced permit application studies under 40 CFR 125.95(a) or (c) or 40 CFR 125.98(g), the permittee must keep records of all submissions that are part of the previous permit application until the subsequent permit is issued.
13. All required reports must be submitted to the IDEM, Office of Water Quality, NPDES Permits Branch, Industrial NPDES Permit Section at [OWQWWPER@idem.in.gov](mailto:OWQWWPER@idem.in.gov) and the Compliance Branch at [wwReports@idem.in.gov](mailto:wwReports@idem.in.gov).

### Part V Averaging Less than LOQ Values

Where the permittee samples more than once per month and obtains an analytical data base that contains values above and below the LOQ, the permittee shall utilize the following protocol that sets a value to be used for analytical values below the LOQ according to their frequency of occurrence. These values can then be used to calculate the average value for DMR reporting.

$$F \text{ (or Frequency of occurrence)} = 1 - \left( \frac{\text{Number of Values Below LOQ}}{\text{Total Number of Values}} \right)$$

$$V \text{ (or values)} = (LOQ) \times (F)$$

All individual values below the LOQ are assigned the value of V.

All data points now have values and can be arithmetically averaged.

Example:

Given:

- Permit limits are 15 mg/l as a monthly average and 20 mg/l as a daily maximum,
- LOQ is 10 mg/l,
- Permittee samples twice a week (8 samples per month), and
- Values obtained are <10 mg/l, <10 mg/l, 23 mg/l, 12 mg/l, <10 mg/l, 15 mg/l, 20 mg/l, and 18 mg/l.

Number of values below LOQ = 3. Total number of values = 8.

$$F = 1 - \left( \frac{3 \text{ samples below LOQ}}{8 \text{ sample values}} \right) = 0.625$$

$$V = (10 \text{ mg/l}) \times (0.625) = 6.25 \text{ mg/l}$$

The values below the LOQ are assigned the value 6.25. Therefore, the arithmetic average is as follows:

$$\left( \frac{6.25 \text{ mg/l} + 6.25 \text{ mg/l} + 23 \text{ mg/l} + 12 \text{ mg/l} + 6.25 \text{ mg/l} + 15 \text{ mg/l} + 20 \text{ mg/l} + 18 \text{ mg/l}}{8 \text{ sample values}} \right) = 13.3 \text{ mg/l}$$



**National Pollutant Discharge Elimination System  
Fact Sheet for  
SABIC Innovative Plastics Mt. Vernon, LLC  
Draft: April 2023  
Final: TBD**

**Indiana Department of Environmental Management**

100 North Senate Avenue  
Indianapolis, Indiana 46204  
(317) 232-8603  
Toll Free (800) 451-6027  
[www.idem.IN.gov](http://www.idem.IN.gov)

<b>Permittee:</b>	SABIC Innovative Plastics Mt. Vernon, LLC One Lexan Lane Mt. Vernon, IN 47620
<b>Existing Permit Information:</b>	Permit Number: IN0002101 Expiration Date: June 30, 2023
<b>Facility Contact:</b>	John Guggenheim, Environmental Engineer 812/831-4146; <a href="mailto:john.guggenheim@sabic.com">john.guggenheim@sabic.com</a>
<b>Facility Location:</b>	One Lexan Lane Mt. Vernon, IN 47620 Posey County
<b>Receiving Stream(s):</b>	Ohio River
<b>GLI/Non-GLI:</b>	Non-GLI
<b>Proposed Permit Action:</b>	Renew
<b>Date Application Received:</b>	January 3, 2023
<b>Source Category:</b>	NPDES Major – Industrial
<b>Permit Writer:</b>	Nikki Gardner, Technical Environmental Specialist 317/232-8707; <a href="mailto:ngardner@idem.in.gov">ngardner@idem.in.gov</a>

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## 1.0 INTRODUCTION

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The Indiana Department of Environmental Management (IDEM) received a National Pollutant Discharge Elimination System (NPDES) Permit application from the permittee on January 3, 2023. In accordance with 327 IAC 5-2-6(a), the current five-year permit was issued with an effective date of July 1, 2018. A five-year permit is proposed in accordance with 327 IAC 5-2-6(a).

The Federal Water Pollution Control Act (more commonly known as the Clean Water Act), as amended, (Title 33 of the United States Code (U.S.C.) Section 1251 *et seq.*), requires an NPDES permit for the discharge of pollutants into surface waters. Furthermore, Indiana law requires a permit to control or limit the discharge of any contaminants into state waters or into a publicly owned treatment works. This proposed permit action by IDEM complies with and implements these federal and state requirements.

In accordance with Title 40 of the Code of Federal Regulations (CFR) Sections 124.8 and 124.56, as well as Title 327 of the Indiana Administrative Code (IAC) Article 5-3-8, a Fact Sheet is required for certain NPDES permits. This document fulfills the requirements established in these regulations. This Fact Sheet was prepared in order to document the factors considered in the development of NPDES Permit effluent limitations. The technical basis for the Fact Sheet may consist of evaluations of promulgated effluent guidelines, existing effluent quality, receiving water conditions, Indiana water quality standards-based wasteload allocations, and other information available to IDEM. Decisions to award variances to Water Quality Standards or promulgated effluent guidelines are justified in the Fact Sheet where necessary.

## 2.0 FACILITY DESCRIPTION

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### 2.1 General

SABIC Innovative Plastics Mt. Vernon, LLC is classified under the following Standard Industrial Classification (SIC) Codes:

- 2821 - Plastics Materials, Synthetic Resins, and Nonvulcanizable Elastomers
- 2865 - Cyclic Organic Crudes and Intermediates, and Organic Dyes and Pigments
- 2869 - Industrial Organic Chemicals, Not Elsewhere Classified
- 2812 - Alkalies and Chlorine

This facility manufactures phenol, acetone, p-cumyl phenol, bisphenol A, chlorine, sodium hydroxide, hydrochloric acid, phosgene, 4-nitro-N-methylphthalimide, sodium nitrite, and engineering plastics (pellet, film, and sheet forms of polycarbonate, polybutylene terephthalate, and polyetherimide). The permit renewal application also includes methanol as being manufactured at this facility (General Information form Box 13). However, in November 2015, SABIC Innovative Plastics Mt. Vernon, LLC had a process chemistry change in the CPP Resin (PBT) unit which in turn changed the feedstock. The original process created methanol as a by-product. As a result of the process change, methanol is no longer produced. Therefore, the facility no longer manufactures methanol.

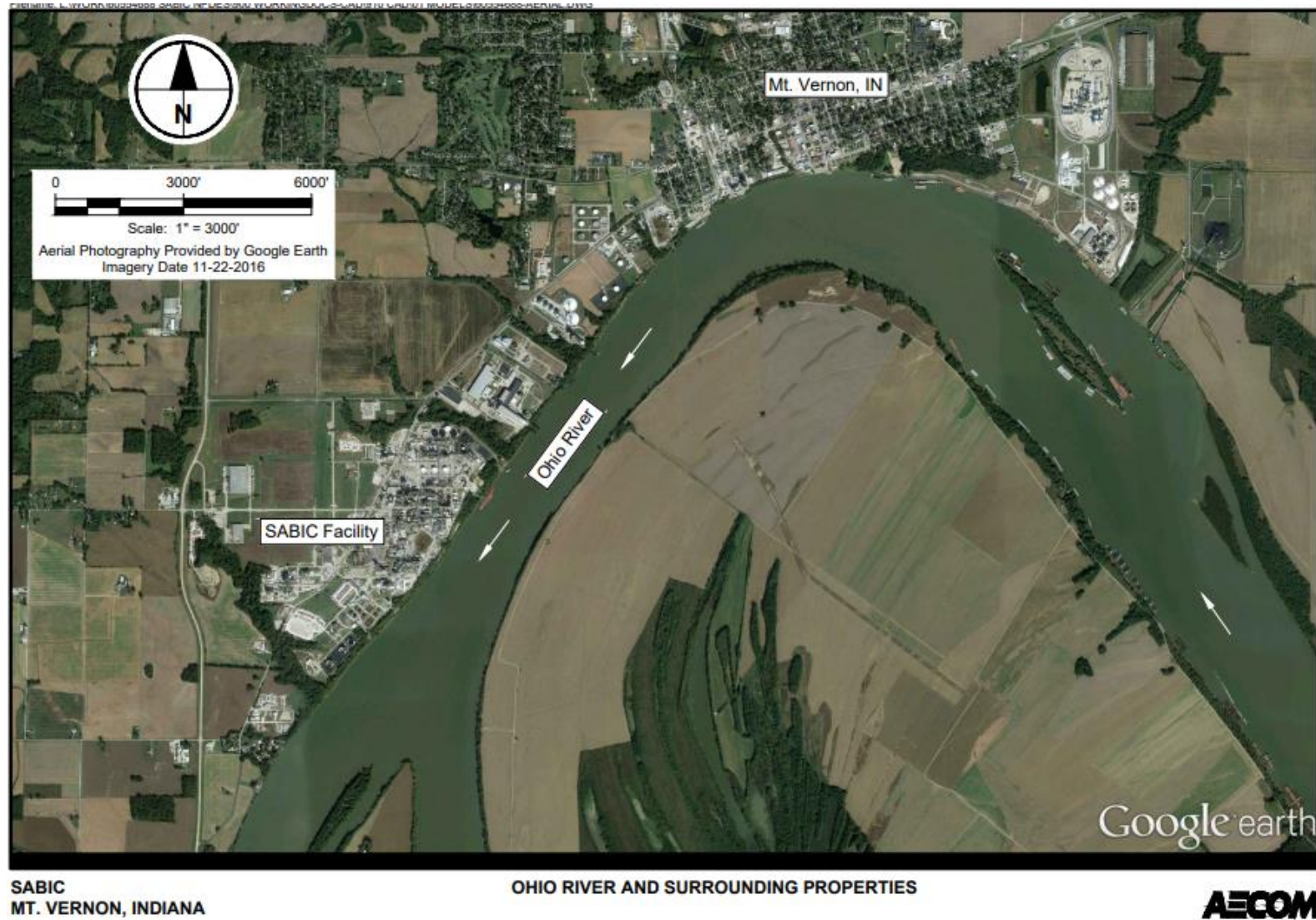
The facility holds the following environmental permits:

RCRA – IN006376362  
Air Title V – T129-36773-00002  
Stormwater – INRM00130

The City of Mt. Vernon supplies potable water to the facility. Water used in the facility for cooling purposes, manufacturing processes, and fire protection is supplied by the facility's Millwater Treatment Plant (MWTP). The MWTP withdraws water from the Ohio River, IDNR Registration No. 65-00481-IN. See Section 6.3 of this Fact Sheet for more information on the cooling water intake structure (CWIS) at the facility. Stormwater that falls upon the manufacturing areas is also collected and treated.

A map showing the location of the facility has been included as Figure 1.

**Figure 1: Facility Location**



SABIC Innovative Plastics Mt. Vernon, LLC  
One Lexan Lane / Mt. Vernon, Indiana, 47620 / Posey County

## 2.2 Outfall Locations

Outfall Number	Latitude	Longitude	Notes
002*	37° 53' 58.2"	-87° 55' 55.4"	Treated effluent discharged with a diffuser (dilution factor of 30.3)
006*	37° 53' 57.3"	-87° 55' 55.1"	Treated effluent discharged without a diffuser.
007	37° 53' 57.5"	-87° 55' 54.8"	Administrative outfall. Represents the mass-based effluent limitations that are applicable to combined discharges of Outfall 002 and Outfall 006

\*The treated effluent is discharged via Outfalls 002 and 006 from the same outfall structure.

## 2.3 Wastewater Treatment

Organic chemicals, plastics, and synthetic fibers (OCPSF) process wastewater, Chlor-Alkali process wastewater, cooling tower blowdown, cogeneration/boiler blowdown, sanitary wastewater, contaminated stormwater, Millwater treatment plant backwash water, coal ash landfill leachate, sump cleaning, extraction well water, city water, and miscellaneous wastewaters from areas identified in the NPDES permit renewal application are discharged to the Ohio River via Outfalls 002/006/007.

Miscellaneous wastewaters include:

- Water from pressure testing piping, tanks, and other equipment;
- Wash waters from process area cleaning;
- Wastewaters generated during shutdowns, maintenance turn arounds, and start-ups;
- Wastewater (including stormwater) from material handling areas including but not limited to truck loading/unloading docks, railcar and ship loading/unloading areas, railcar and tank truck unloading/loading containment sumps;
- Laboratory wastewater; wastewater from painting and surface prep activities;
- Wastewater from Haz Mat team and Fire Brigade activities, including training;
- Fire system flush waters.

The following are OCPSF process wastewaters discharging to the Ohio River via Outfall 002/006/007:

- Phenol/Acetone wastewater;
- Phosgene wastewater;
- Bisphenol-A (BPA) wastewater;
- Polycarbonate (PC) Resin wastewater;
- PC Finishing wastewater;
- PC Sheet wastewater;
- Crystalline Product Plant (CPP) (Polybutylene terephthalate) Resin wastewater;

- CPP Finishing wastewater;
- Research and Development (R&D) Labs wastewater;
- High Performance Polymers (HPP) (Polyetherimide) Monomer/Polymer/Copolymer wastewater; and
- HPP Finishing wastewater.

Organic chemicals, plastics, and synthetic fibers (OCPSF) process wastewater, Chlor-Alkali process wastewater, cooling tower blowdown, cogeneration/boiler blowdown, sanitary wastewater, contaminated stormwater, Millwater treatment plant backwash water, coal ash landfill leachate, sump cleaning, extraction well water, and city water are collected in a combined gravity sewer system which either flows to the Main Lift Station, North Lift Station, or South Lift Station. The North Lift Station and South Lift Station direct the wastewater to the Main Lift Station.

Prior to entering the Main Lift Station, the wastewater flows through a bar screener and the pH can be adjusted with Sulfuric acid after the wastewater enters the Main Lift Station. The wastewater is then pumped either to the wastewater treatment plant or to one of the three (3) above ground storage tanks. Wastewater sent to the storage tanks is subsequently pumped to the wastewater treatment plant.

As the wastewater flows into the wastewater treatment plant, the pH is adjusted with carbon dioxide. The wastewater then flows through the primary clarifier, which removes inert solids and the precipitated metals. Effluent from the primary clarifiers flow into the equalization basins where nutrients are added to the wastewater. The wastewater's pH is then adjusted with Carbon dioxide as it is pumped into the Aeration Basins and if more pH adjustment is needed Sulfuric acid can be added at the Aeration pH Adjustment Box. The wastewater flows through two (2) separate Aeration Basins that are run in series, and each basin contains activated carbon, O<sub>2</sub>, and activated sludge for biological treatment. After the biological treatment in the Aeration basins, the wastewater flows into the Flocculator Splitter Box where polymer can be added to help settle the biomass. The wastewater then flows through the secondary clarifiers where the biomass is settled out and pumped back to the Aeration Basins or sent out as Wasted Activated Sludge (WAS) based on the activated sludge concentration. The effluent from the secondary clarifier is sent to a wet well where Sodium hypochlorite and Antifoam are added and the effluent is then pumped to a Step Aerator. Sodium bisulfite is added at the bottom of the 1<sup>st</sup> Step Aerator to neutralize any residual Chlorine that may be present. The effluent then flows through a flume where some samples are taken and then it free flows to the 2<sup>nd</sup> Step Aerator where more samples are taken. The effluent is then discharged through a diffuser via Outfall 002 with a dilution factor of 30.3 to the Ohio River. Under certain river conditions, Outfall 006 (surface discharge, no diffuser) may be opened to help discharge effluent water to the Ohio River.

Primary clarifier blowdowns are directed to the primary sludge thickener. Overflow from the primary sludge thickener tank is recycled back to the beginning of the wastewater treatment plant. The sludge from the primary sludge thickener tank is sent to the secondary sludge 228 wet well. Secondary clarifier biomass is directed to the secondary sludge thickener tank. Overflow from the secondary sludge thickener tank is recycled back to the beginning of the wastewater treatment plant. The sludge from the secondary sludge thickener tank is sent to the secondary aerobic digester tank. The sludge from the secondary aerobic digester tank is sent

to the secondary sludge 228 wet well where it is processed through a belt press going into a dumpster and then it is sent to an approved landfill. The filtrate from the belt press is recycled back into the plant. Water Balance Diagrams are included as Figures 2.0, 2.1, and 2.2.

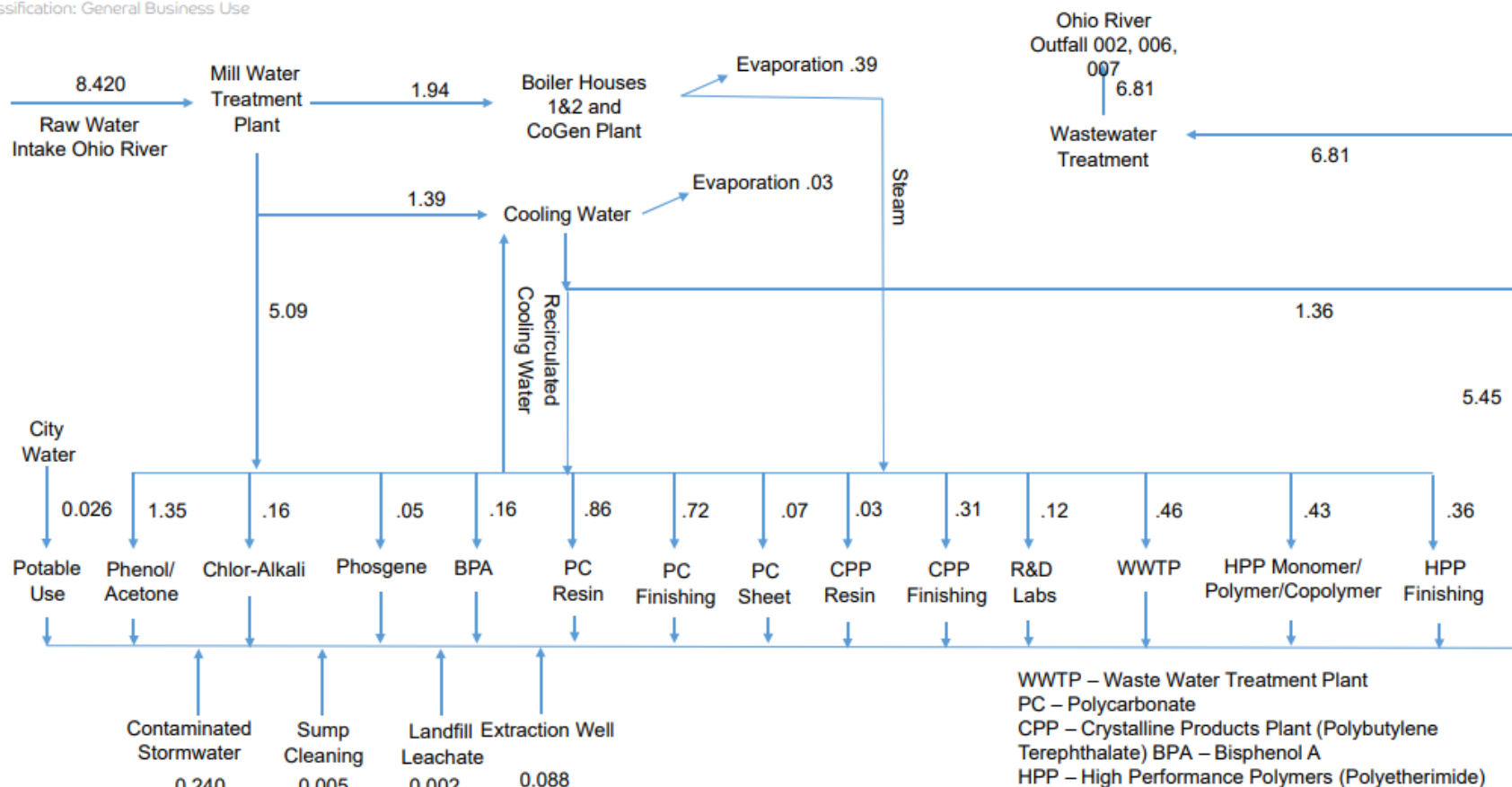
**\*Changes noted:**

Figure 2.1: Site Water Balance Diagram – Major Wastewater Streams and Wastewater Collection. The BPA Wastewater Tanks (BPA basins), previously located after the Phenol Recovery system, have been removed.

Figure 2.2: Site Water Balance Diagram – Wastewater Treatment Processes. Tertiary filters are no longer in use (removed 2013/2014), therefore, filter backwash is no longer discharged.

**Figure 2.0: Site Water Balance Diagram**

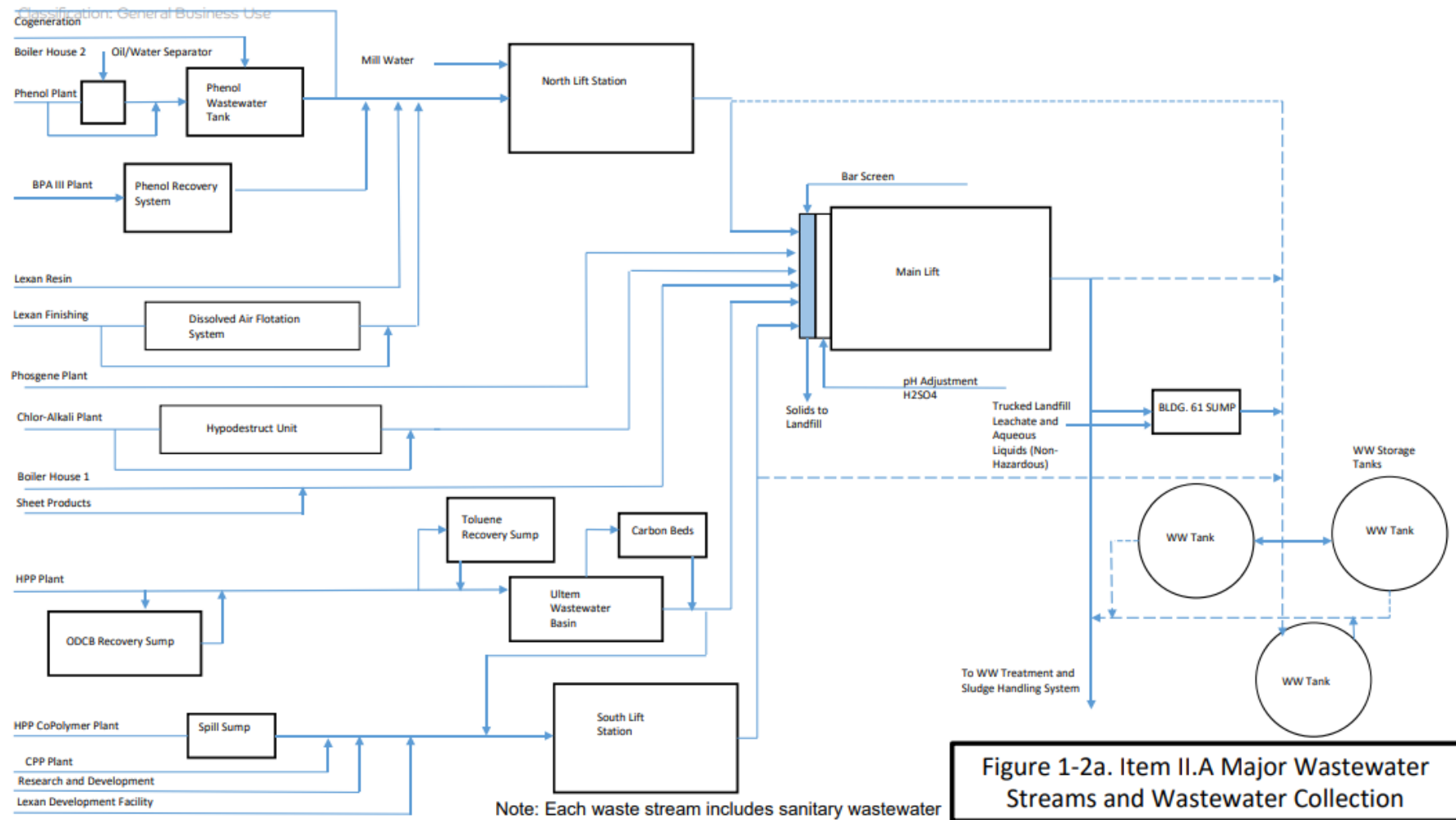
Classification: General Business Use



Note: Each waste stream includes sanitary wastewater

**Figure 1-1. Item II.A Site Water Balance (MGD) Annual Average Basis 2022**

**Figure 2.1: Site Water Balance Diagram – Major Wastewater Streams and Wastewater Collection**



**Figure 1-2a. Item II.A Major Wastewater Streams and Wastewater Collection**



[illegible]

Outfall 002: According to the EPA ECHO database, the design flow (highest monthly average) based on the most recent 2 years of data is 7.6 MGD. Outfall 002 is a physical outfall with a diffuser.

Outfall 006: According to the EPA ECHO database, this outfall has not discharged during the most recent two years reviewed. According to the permit renewal application, the outfall has not discharged since 2011. Outfall 006 is a physical outfall and shares the same outfall structure as Outfall 002. However, discharge from Outfall 006 does not utilize the diffuser.

Outfall 007: Outfall 007 is an administrative outfall and represents the mass-based effluent limitations that are applicable to combined discharges of Outfall 002 and Outfall 006.

The permittee shall have the wastewater treatment facilities under the responsible charge of an operator certified by the Commissioner in a classification corresponding to the classification of the wastewater treatment plant as required by IC 13-18-11-11 and 327 IAC 5-22-5. In order to operate a wastewater treatment plant, the operator shall have qualifications as established in 327 IAC 5-22-7. IDEM has retained the permittee's Class D industrial wastewater treatment plant classification as no changes have been made to the treatment system.

## **2.4 Changes in Operation**

In the permit application, no changes in operation were identified as occurring since the previous permit renewal.

## **2.5 Facility Stormwater**

The facility must comply with General Industrial Stormwater Permit INRM00130, which expires 06/30/2023.

## **3.0 PERMIT HISTORY**

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### **3.1 Compliance History**

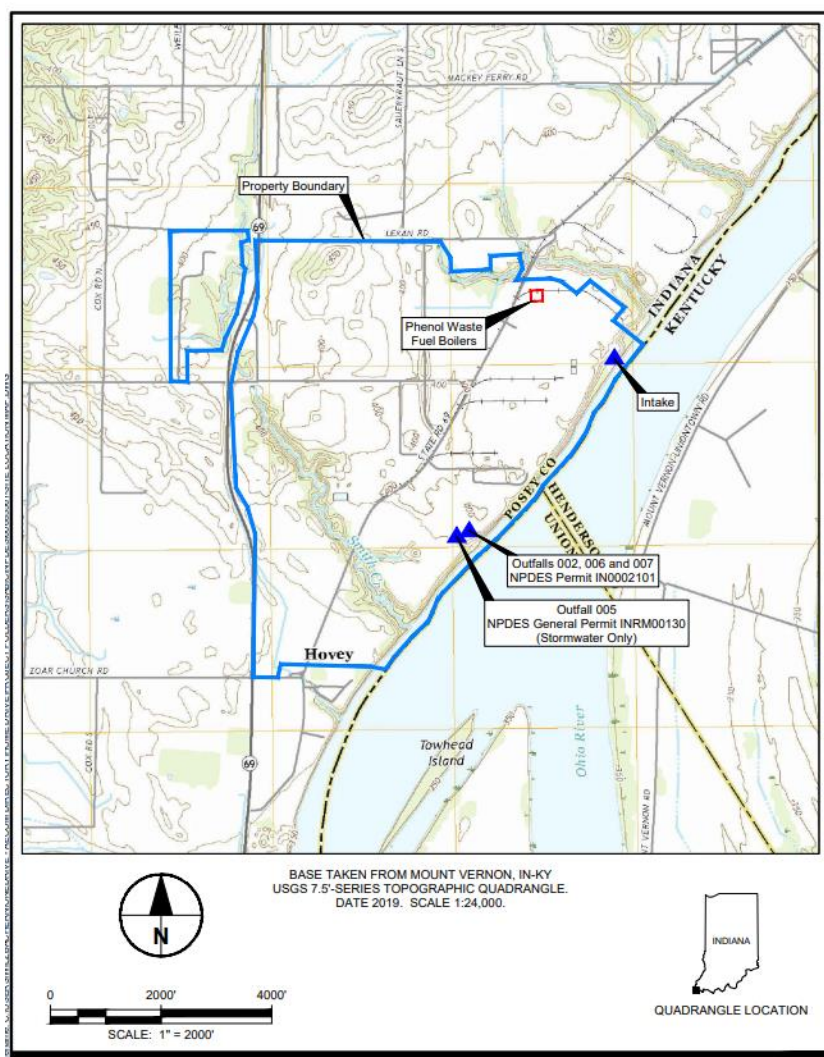
A review of this facility's discharge monitoring data was conducted for compliance verification and shows no permit limitation violations at Outfalls 002, 006, or 007 between July 2018 and February 2023. There are no pending or current enforcement actions regarding this NPDES permit.

## 4.0 LOCATION OF DISCHARGE/RECEIVING WATER USE DESIGNATION

The receiving stream for Outfalls 002 and 006 is the Ohio River. Outfall 007 is an administrative outfall only and doesn't have a physical discharge. The  $Q_{7,10}$  low flow value of the Ohio River is 12,900 cfs and shall be capable of supporting a well-balanced, warm water aquatic community and full body contact recreation in accordance with 327 IAC 2-1-3.

The permittee discharges to the Ohio River—a water of the state that is not within the Great Lakes system. Therefore, it is subject to NPDES requirements specific to dischargers not discharging to waters within the Great Lakes system under 327 IAC 2-1 and 327 IAC 5-2-11.1. These rules contain applicable water quality standards and the procedures to calculate and incorporate water quality-based effluent limitations. The discharge is also subject to the Pollution Control Standards for Discharges to the Ohio River as established by the Ohio River Valley Water Sanitation Commission (ORSANCO). A Site Map has been included as Figure 3.

**Figure 3: Site Map**



SABIC  
MT. VERNON, INDIANA

SITE LOCATION MAP

AECOM

## 4.1 Total Maximum Daily Loads (TMDLs)

Section 303(d) of the Clean Water Act requires states to identify waters, through their Section 305(b) water quality assessments, that do not or are not expected to meet applicable water quality standards with federal technology based standards alone. States are also required to develop a priority ranking for these waters taking into account the severity of the pollution and the designated uses of the waters. Once this listing and ranking of impaired waters is completed, the states are required to develop TMDLs for these waters in order to achieve compliance with the water quality standards. Indiana's 2022 303(d) List of Impaired Waters was developed in accordance with Indiana's Water Quality Assessment and 303(d) Listing Methodology for Waterbody Impairments and Total Maximum Daily Load Development for the 2022 Cycle.

The Ohio River, Assessment-Unit INH8\_08, HUC 051402011203, is on the 2022 303(d) list of impaired waters for dioxin in water, Escherichia coli (E. coli), polychlorinated biphenyls (PCBs) in water, and total mercury in water.

A TMDL for the Ohio River in 12-digit HUC 051402011203 has not been done. The U.S. EPA is leading the effort to develop a bacteria TMDL through their contractor Tetra Tech. ORSANCO is providing the ambient water quality data necessary to complete the project. Please see <https://www.orsanco.org/programs/bacteria-tmdl/> for additional information.

## 5.0 PERMIT LIMITATIONS

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### 5.1 Technology-Based Effluent Limits (TBELs)

EPA develops effluent limitations guidelines (ELGs) for industrial and commercial activities as required by the Clean Water Act (CWA). ELGs are technology-based effluent limits (TBELs). TBELs established pursuant to sections 301(b), 304, and 306 of the CWA represent the minimum level of treatment for industrial point sources that must be included in an NPDES permit (327 IAC 5-5-2(a)). The federal effluent guidelines and standards are located at 40 CFR 403 through 471, inclusive, and are incorporated into Indiana law at 327 IAC 5-2-1.5. In Indiana, NPDES permits are required to ensure compliance with these federal ELGs under 327 IAC 5-2-10(a)(1), 327 IAC 5-2-10(a)(2), and 327 IAC 5-5-2.

In the absence of ELGs for a particular process or parameter, TBELs can also be established on a case-by-case basis for a particular process or parameter using best professional judgment (BPJ) in accordance with 327 IAC 5-5-2 and 5-2-10 (see also 40 CFR 122.44 and 125.3, and Section 402(a)(1) of the CWA).

#### **Outfall 002 and Outfall 006:**

Technology-based effluent limitations are not applied at these outfalls.

## **Outfall 007:**

The applicable technology-based standards for the SABIC Innovative Plastics Mt. Vernon, LLC facility are contained in 40 CFR 414 – Organic Chemicals, Plastics, and Synthetic Fibers Point Source Category, 40 CFR 415 – Inorganic Chemicals Manufacturing Point Source Category, and 40 CFR 463 – Plastics Molding and Forming Point Source Category. The table below provides a summary of the applicable regulations.

The facility is subject to Subparts D, F, G, and I of 40 CFR 414, which was proposed on March 21, 1983. The facility was manufacturing chemicals and engineering plastics prior to when 40 CFR 414 was proposed. Therefore, the portions of the facility that engineer Polycarbonate, Polybutylene terephthalate, and Polyetherimide are subject to the existing source ELGs set forth in Subpart D, Thermoplastic Resins, 40 CFR 414.41 and 40 CFR 414.43. The portions of the facility that manufacture Phenol and Acetone are subject to the existing source ELGs set forth in Subpart F, Commodity Organic Chemicals, 40 CFR 414.61 and 40 CFR 414.63. The portions of the facility that manufacture Bisphenol-A and Phosgene are subject to the existing source ELGs set forth in Subpart G, Bulk Organic Chemicals, 40 CFR 414.71 and 40 CFR 414.73. The existing source ELGs of Subparts D, F, and G contain best practicable control technology (BPT) and best available technology (BAT) effluent limitations. The only BPT parameters are BOD<sub>5</sub>, Total Suspended Solids (TSS), and pH. The most stringent between the BPT and BAT effluent limitations are applied. Per 40 CFR 414.43, 40 CFR 414.63, and 40 CFR 414.73, since the facility uses end-of-pipe biological treatment, the facility must achieve discharge effluent limitations in accordance with Subpart I, Direct Discharger Point Sources that use End-of-Pipe Biological Treatment, 40 CFR 414.91. In the case of Total Chromium, Copper, Lead, Nickel, Zinc, and Total Cyanide, the discharge quantity (mass) was determined by multiplying the 40 CFR 414.91 ELGs for these pollutants times the flow from metal-bearing waste streams for the metals and times the flow from cyanide bearing waste streams for total cyanide. The metal-bearing waste streams and cyanide-bearing waste streams are defined as those waste streams listed in Appendix A of 40 CFR 414. The only wastestreams at the SABIC Innovative Plastics Mt. Vernon, LLC facility listed in Appendix A were the Phenol/Acetone process wastestream and the Bisphenol-A process wastestream. Therefore, the flow used to calculate the mass based TBELs for Total Chromium, Copper, Lead, Nickel, Zinc, and Total Cyanide is 0.556 MGD (based on Table 4.0 of the permit renewal application). Table 2, Table 3, Table 4, and Table 5 in appendix A for applicable ELG subparts and calculated permit effluent limits.

The facility is subject to Subpart F of 40 CFR 415. Phase I of 40 CFR 415 was proposed on July 24, 1980, and Phase II was proposed on October 25, 1983. The facility was manufacturing chemicals and engineering plastics prior to when both phases of 40 CFR 415 were proposed. Therefore, the portion of the facility that manufactures Chlorine is subject to the existing source ELGs set forth in Subpart F, Chlor-alkali Subcategory (Chlorine and Sodium or Potassium hydroxide Production), 40 CFR 415.62(b) and 40 CFR 415.63(b). The facility's Chloro-alkali plant is integral to the production of polycarbonate and phosgene. The primary by-product of polycarbonate production is brine (water containing NaCl) contaminated with organics. The organics are removed from the brine and discharged to the facility's wastewater treatment plant. The brine is then used as the feedstock to the Chloro-alkali plant, which produces chlorine and caustic Sodium hydroxide. The chlorine is used to produce phosgene, which along with the caustic is used to manufacture polycarbonate, completing the closed loop manufacturing process. Therefore, the process wastewaters from the Chloro-alkali plant, Polycarbonate

manufacturing, and Phosgene manufacturing are subject to 40 CFR 414.41, 40 CFR 414.43, 40 CFR 414.71, 40 CFR 414.73, 40 CFR 415.62(b) and 40 CFR 415.63(b). The existing source ELGs of Subparts D, F, and G contain best practicable control technology (BPT) and best available technology (BAT) effluent limitations. The most stringent between the BPT and BAT effluent limitations are applied. EPA established ELGs for Total Suspended Solids (TSS), Total Copper, Total Lead, Total Nickel, Total Residual Chlorine (TRC), and pH. The pH must be within 6.0-9.0 s.u. at all times. Limits for Total Suspended Solids (TSS), Total Copper, Total Lead, Total Nickel, and Total Residual Chlorine (TRC) are production-based limits (lbs. of pollutant per 1,000 lbs. of product). The average daily production of Chlorine is 574,728 lbs./day. The wastewater treatment plant annual average flow of 6.8 MGD was used to calculate mass-based limits for the discharge of treated process wastewater (see Figure 2.0: Site Water Balance Diagram). Table 6 in appendix A contains the applicable ELG subparts and calculated permit effluent limits.

The facility is subject to Subpart B of 40 CFR 463. The portions of the facility that use water to clean plastic product and shaping equipment that has come in contact with plastic material is subject to the existing source ELGs set forth in Subpart B, Cleaning Water Subcategory, 40 CFR 463.22. The existing source ELGs of Subpart B contains only best practicable control technology (BPT), therefore, the BPT effluent limitations are applied. The flow used to calculate the mass based TBELs for BOD<sub>5</sub>, O&G, and TSS is 0.002 MGD (based on Table 4.0 of the permit renewal application). Table 7 in appendix A contains the applicable ELG subparts and calculated permit effluent limits.

## Applicable ELG Subparts and Production Levels

Subpart	Description	Average Daily Production
Subpart D - Thermoplastic Resins (40 CFR § 414.41 and 40 CFR § 414.43)	Polycarbonate, Polybutylene terephthalate, and Polyetherimide Production	-----
Subpart F - Commodity Organic Chemicals (40 CFR § 414.61 and 40 CFR § 414.63)	Phenol and Acetone Production	-----
Subpart G - Bulk Organic Chemicals (40 CFR § 414.71 and 40 CFR § 414.73)	Bisphenol-A and Phosgene Production	-----
Subpart I - Direct Discharger Point Sources that use End-of-Pipe Biological Treatment (40 CFR § 414.91)	Polycarbonate, Polybutylene terephthalate, Polyetherimide, Phenol, Acetone, Bisphenol-A, and Phosgene Production	-----
Subpart F – Chlor-alkali Subcategory (Chlorine & Sodium or Potassium Hydroxide Production) (40 CFR § 415.62(b) and 40 CFR § 415.63(b))	Chlorine Production	574,728 lbs./day
Subpart B – Cleaning Water Subcategory (40 CFR § 463.22)	Cleaning water for plastic product and shaping equipment that has come in contact with plastic material	-----

## 5.2 Water Quality-Based Effluent Limits (WQBELs)

WQBELs are designed to be protective of the beneficial uses of the receiving water and are independent of the available treatment technology. The WQBELs for this facility are based on the most stringent of the following for each pollutant:

- Water quality criteria in 327 IAC 2-1-6 or developed under the procedures described in 327 IAC 2-1-8.2 through 8.7 and 327 IAC 2-1-8.9, and implementation procedures in 327 IAC 5; or
- Water quality criteria established by the Ohio River Valley Water Sanitation Commission or ORSANCO, (ORSANCO “Pollution Control Standards for Discharges to the Ohio River”, 2019 Revision), including the water quality criteria under Chapter 3 of these standards or developed under the procedures described in the Appendix of these standards and implementation procedures in these standards and 327 IAC 5.

Limitations are required for any parameter which has the reasonable potential to exceed (RPE) a water quality criterion as determined using the procedures under 327 IAC 5-2-11.1(h).

WQBEL calculations and RPE analyses are documented in Wasteload Allocation (WLA) Reports. Historical WLA Reports for this facility are available in Indiana’s Virtual File Cabinet:

WLA dated July 4, 1990:

[https://ecm.idem.in.gov/cs/idcplg?IdcService=GET\\_FILE&dID=83446198&dDocName=83449403&Rendition=web&allowInterrupt=1&noSaveAs=1](https://ecm.idem.in.gov/cs/idcplg?IdcService=GET_FILE&dID=83446198&dDocName=83449403&Rendition=web&allowInterrupt=1&noSaveAs=1)

WLA dated April 4, 1996:

[https://ecm.idem.in.gov/cs/idcplg?IdcService=GET\\_FILE&dID=83446197&dDocName=83449402&Rendition=web&allowInterrupt=1&noSaveAs=1](https://ecm.idem.in.gov/cs/idcplg?IdcService=GET_FILE&dID=83446197&dDocName=83449402&Rendition=web&allowInterrupt=1&noSaveAs=1)

WLA001497, March 30, 2007:

[https://ecm.idem.in.gov/cs/idcplg?IdcService=GET\\_FILE&dID=83446195&dDocName=83449400&Rendition=web&allowInterrupt=1&noSaveAs=1](https://ecm.idem.in.gov/cs/idcplg?IdcService=GET_FILE&dID=83446195&dDocName=83449400&Rendition=web&allowInterrupt=1&noSaveAs=1)

WLA001972, dated April 12, 2013:

[https://ecm.idem.in.gov/cs/idcplg?IdcService=GET\\_FILE&dID=83446194&dDocName=83449399&Rendition=web&allowInterrupt=1&noSaveAs=1](https://ecm.idem.in.gov/cs/idcplg?IdcService=GET_FILE&dID=83446194&dDocName=83449399&Rendition=web&allowInterrupt=1&noSaveAs=1)

### **5.3 Effluent Limitations and Monitoring Requirements by Outfall**

Under 327 IAC 5-2-10(a) (see also 40 CFR 122.44), NPDES permit requirements are technology-based effluent limitations and standards (including TBELs based on federal effluent limitations guidelines or developed on a case-by-case basis using BPJ, where applicable), water quality standards-based, or based on other more stringent requirements. The decision to limit or monitor the parameters contained in this permit is based on information contained in the permittee's NPDES application and other available information relating to the facility and the receiving waterbody as well as the applicable federal effluent limitations guidelines. In addition, when renewing a permit, the existing permit limits, the antibacksliding requirements under 327 IAC 5-2-10(a)(11), and the antidegradation requirements under 327 IAC 2-1.3 must be considered.

#### **TBELs:**

Process wastewater flow was used to convert TBELs from concentration to mass where required. The current permit renewal application provided an annual average flow of 6.8 MGD from the process wastewater treatment plant. To improve the accuracy of calculated TBELs during the next permit renewal, the permit will include a requirement for the permittee to provide an updated OCPSF WWTP breakdown with the next permit renewal application. The breakdown must include the following at a minimum:

- List of all operations discharging to the WWTP (i.e. OCPSF categorical operations, OCPSF direct support operations, other),
- Flow from each operation to the WWTP (MGD), and
- Flow from each operation with OCPSF organics (MGD).

#### **WQBELs:**

WQBELs are calculated using the Outfall 002 design flow (highest monthly average over the most recent two year period). The current design flow is 7.6 MGD.



### 5.3.1 All External Outfalls (002 and 006)

#### ***Narrative Water Quality Based Limits***

The narrative water quality criteria contained under 327 IAC 2-1-6(a)(1) and (2) have been included in this permit to ensure that these minimum water quality conditions are met.

#### ***Flow***

The effluent flow is to be monitored in accordance with 327 IAC 5-2-13(a)(2).

#### ***pH***

Discharges to waters of the state are limited to the range of 6.0-9.0 s.u., in accordance with 327 IAC 2-1-6(b)(2).

### 5.3.2 Outfall 002 (discharge with diffuser)

#### ***Diffuser and Discharge-Induced Mixing Zone (DIMZ)***

A dilution factor of 30.3 was used to calculate wasteload allocations for Outfall 002 (with diffuser) based on acute aquatic life criteria for all pollutants of concern that are not bioaccumulative chemicals of concern (BCCs). A detailed discussion on the diffuser and DIMZ is provided in WLA001972, dated April 12, 2013. See Section 5.2 of this Fact Sheet for a link to the report.

#### ***Acrylonitrile, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(k)fluoranthene, 3,4-Benzofluoranthene, Chrysene, Vinyl Chloride***

Acrylonitrile, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(k)fluoranthene, 3,4-Benzofluoranthene, Chrysene, and Vinyl Chloride effluent limitations have been retained from the previous permit. These parameters are regulated by 40 CFR 414.91(b), resulting in the application of TBELs. However, as part of the 2013 permit renewal, WLA001972 was completed on April 12, 2013, and these parameters were evaluated for RPE. The results of the RPE analysis showed that these parameters had reasonable potential to exceed, therefore, WQBELs were required. The WQBELs and TBELs were compared (see table below) and the more stringent limitations were applied. It was determined that the WQBELs for these parameters were more stringent than the TBELs, and were therefore, the applicable limitations. A new WLA report was not requested for the 2023 permit renewal because the water quality criteria applicable to these parameters have not changed. See Section 5.2 of this Fact Sheet for a link to WLA001972.

Parameter	414.91 ELGs (mg/l)		WLA001972 Limits (mg/l)	
	Monthly Avg	Daily Max	Monthly Avg	Daily Max
Acrylonitrile	0.096	0.242	0.067	0.16
Benzo(a)anthracene	0.022	0.059	0.0050	0.012
Benzo(a)pyrene	0.023	0.061	0.0050	0.012
Benzo(k)fluoranthene	0.022	0.059	0.0050	0.012
3,4-Benzofluoranthene	0.023	0.061	0.0050	0.012
Chrysene	0.022	0.059	0.0050	0.012
Vinyl Chloride	0.104	0.268	0.033	0.080

### 3,3-Dichlorobenzidine

A prescreening of available 3,3-Dichlorobenzidine data was completed for this permit renewal. A finding of no RPE was made, therefore, IDEM proposes to remove monitoring requirements for this parameter.

Reasonable Potential Statistical Procedure for Discharges to the Ohio River															
Facility Name: SABIC Innovative Plastics NPDES Number: IN0002101 WLA Number: Prescreen WLA Report Date: 3-9-2023 Outfall Number: 002 Receiving Stream: Ohio River		Monthly Average Determination							Daily Maximum Determination						
Parameters	Reasonable Potential to Exceed? (Yes or No)*	Maximum Monthly Average (ug/l)	Number of Monthly Averages	CV	MF	PEQ (ug/l)	PEL (ug/l)	PEQ > PEL?	Maximum Daily Sample (ug/l)	Number of Daily Samples	CV	MF	PEQ (ug/l)	PEL (ug/l)	PEQ > PEL?
3,3'-Dichlorobenzidine	No	5	24	0.6	1.3	7	27	No	5	24	0.6	1.3	7	66	No

### Fecal Coliform and E. coli bacteria

The permitted discharge includes a sanitary wastewater component, therefore effluent limitations and monitoring requirements for Fecal Coliform have been retained from the previous permit. Chapter 5.4.A.4. of the Ohio River Valley Water Sanitation Commission or ORSANCO, (ORSANCO "Pollution Control Standards for Discharges to the Ohio River", 2019 Revision), establishes a minimum level of treatment for sewage. This provision establishes limits for fecal coliform and *E. coli* bacteria.

In addition, the disinfection requirements applicable to sanitary discharges established under 327 IAC 5-10-6 is applicable to this discharge. Under Subsection (e) of this rule, limitations are established for *E. coli* bacteria. The requirements for *E. coli* under 327 IAC 5-10-6(e) are the same as the requirements established under 327 IAC 2-1-6(d)(5).

Source	Bacteria Limitations/Requirements
Chapter 5.4.A.4.i.; ORSANCO	The geometric mean of the fecal coliform bacteria content of effluent samples collected in a month shall not exceed 2,000/100 mL

Source	Bacteria Limitations/Requirements
Chapter 5.4.A.4.ii.; ORSANCO	During the months of April through October, the geometric mean of the <i>E. coli</i> bacteria content of effluent samples collected in a 90-day period shall not exceed 130/100 mL, and no more than 25 percent of the values shall exceed 240/100 mL.
327 IAC 2-1-6(d)(5); and 327 IAC 5-10-6(e)	During the months of April through October, sanitary wastewater dischargers shall ensure the following: (1) The concentration of <i>E. coli</i> in the undiluted discharge does not exceed one hundred twenty-five (125) cfu or MPN per one hundred (100) milliliters as a geometric mean of the effluent samples taken in a calendar month. (2) Not more than ten percent (10%) of all samples when not less than ten (10) samples are taken and analyzed for <i>E. coli</i> in a calendar month exceed two hundred thirty-five (235) cfu or MPN per one hundred (100) milliliters as a daily maximum. Under this subdivision, the calculation of ten percent (10%) of the samples taken shall be limited to the lowest whole number result.

The *E. coli* requirements established in the Indiana rules are more stringent than the ORSANCO *E. coli* requirements; therefore, they will be included in the permit. The fecal coliform limit contained in the ORSANCO standards will also be included in the permit; however, since the *E. coli* requirements will be in effect from April through October, the fecal coliform requirements will only be applied from November through March.

### ***Hexachlorobenzene and Hexachlorobutadiene***

To ensure compliance with Indiana Water Quality Standards, the WQBELs for these parameters have been retained from the previous permit. These parameters have been identified as bioaccumulative chemicals of concern (BCC). As BCCs, the water quality criteria for these parameters are applied to the undiluted discharge in accordance with 327 IAC 5-2-11.1(b)(6). These parameters are regulated by 40 CFR 414, resulting in the application of TBELs. However, as part of the 2013 permit renewal, WLA001972 was completed on April 12, 2013, and these parameters were evaluated for RPE. The results of the RPE analysis showed that these parameters had reasonable potential to exceed, therefore, WQBELs were required. The WQBELs and TBELs were compared (see table below) and the more stringent limitations were applied. It was determined that the WQBELs for these parameters were more stringent than the TBELs, and were therefore, the applicable limitations. A new WLA was not requested for the 2023 permit renewal because the water quality criteria applicable to these parameters have not changed. See Section 5.2 of this Fact Sheet for a link to WLA001972.

Parameter	414.91 ELGs (mg/l)		WLA001972 Limits (mg/l)	
	Monthly Avg	Daily Max	Monthly Avg	Daily Max
Hexachlorobenzene	0.015	0.028	0.00000028	0.00000068
Hexachlorobutadiene	0.02	0.049	0.00044	0.0011

## ***Mercury***

Mercury limitations have been retained from the previous permit. As part of the 2013 permit renewal, WLA001972 was completed on April 12, 2013, and Mercury was evaluated for RPE. The results of the RPE analysis showed that Mercury had RPE, therefore, WQBELs were required. See Section 5.2 of this Fact Sheet for a link to WLA001972.

## ***Oil and Grease (O & G)***

Effluent limitations and monitoring requirements for O&G have been retained from the previous permit. The daily maximum limitation of 5 mg/l is based on the limit of quantification (LOQ) for this parameter.

## ***Total Residual Chlorine (TRC)***

Effluent limitations and monitoring requirements for TRC have been retained from the previous permit.

## ***Total Phosphorus***

Based on a review of available data, phosphorus is present in the discharge. Therefore, a reporting requirement has been included in the permit to determine if phosphorus removal or control facilities are required in accordance with 327 IAC 5-10-2 or if there is RPE once the criteria has been developed for phosphorus in streams.

## ***Chloride, Sulfate, and Hardness***

Based on a review of available data, chloride monitoring is proposed. Data collected will be used to determine if there is RPE. The water quality criteria for chloride is hardness and sulfate dependent under 327 IAC 2-1.5-8(b)(5). Therefore, hardness and sulfate must be monitored in conjunction with chloride.

### **5.3.3 Outfall 006 (discharge without diffuser)**

#### ***River Stage RM 791.5***

When a discharge occurs via Outfall 006, SABIC Innovative Plastics Mt. Vernon, LLC is required to report the river stage (in feet) for the Ohio River at River Mile 791.5. Reporting of the river stage is necessary to determine the applicability of biomonitoring requirements at Outfall 006.

**Acrylonitrile, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(k)fluoranthene, 3,4-Benzofluoranthene, Chrysene, Vinyl Chloride**

Acrylonitrile, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(k)fluoranthene, 3,4-Benzofluoranthene, Chrysene, and Vinyl Chloride effluent limitations have been retained from the previous permit. These parameters are regulated by 40 CFR 414.91(b), resulting in the application of TBELs. However, as part of the 2013 permit renewal, WLA001972 was completed on April 12, 2013, and these parameters were evaluated for RPE. The results of the RPE analysis showed that these parameters had reasonable potential to exceed, therefore, WQBELs were required. The WQBELs and TBELs were compared (see table below) and the more stringent limitations were applied. It was determined that the WQBELs for these parameters were more stringent than the TBELs, and were therefore, the applicable limitations. A new WLA report was not requested for the 2023 permit renewal because the water quality criteria applicable to these parameters have not changed. See Section 5.2 of this Fact Sheet for a link to WLA001972.

Parameter	414.91 ELGs (mg/l)		WLA001972 Limits (mg/l)	
	Monthly Avg	Daily Max	Monthly Avg	Daily Max
Acrylonitrile	0.096	0.242	0.067	0.16
Benzo(a)anthracene	0.022	0.059	0.0050	0.012
Benzo(a)pyrene	0.023	0.061	0.0050	0.012
Benzo(k)fluoranthene	0.022	0.059	0.0050	0.012
3,4-Benzofluoranthene	0.023	0.061	0.0050	0.012
Chrysene	0.022	0.059	0.0050	0.012
Vinyl Chloride	0.104	0.268	0.033	0.080

**Fecal Coliform and *E. coli* bacteria**

The permitted discharge includes a sanitary wastewater component, therefore effluent limitations and monitoring requirements for Fecal Coliform have been retained from the previous permit. Chapter 5.4.A.4. of the Ohio River Valley Water Sanitation Commission or ORSANCO, (ORSANCO “Pollution Control Standards for Discharges to the Ohio River”, 2019 Revision), establishes a minimum level of treatment for sewage. This provision establishes limits for fecal coliform and *E. coli* bacteria.

In addition, the disinfection requirements applicable to sanitary discharges established under 327 IAC 5-10-6 is applicable to this discharge. Under Subsection (e) of this rule, limitations are established for *E. coli* bacteria. The requirements for *E. coli* under 327 IAC 5-10-6(e) are the same as the requirements established under 327 IAC 2-1-6(d)(5).

Source	Bacteria Limitations/Requirements
Chapter 5.4.A.4.i.; ORSANCO	The geometric mean of the fecal coliform bacteria content of effluent samples collected in a month shall not exceed 2,000/100 mL

Source	Bacteria Limitations/Requirements
Chapter 5.4.A.4.ii.; ORSANCO	During the months of April through October, the geometric mean of the <i>E. coli</i> bacteria content of effluent samples collected in a 90-day period shall not exceed 130/100 mL, and no more than 25 percent of the values shall exceed 240/100 ml.
327 IAC 2-1-6(d)(5); and 327 IAC 5-10-6(e)	During the months of April through October, sanitary wastewater dischargers shall ensure the following: (1) The concentration of <i>E. coli</i> in the undiluted discharge does not exceed one hundred twenty-five (125) cfu or MPN per one hundred (100) milliliters as a geometric mean of the effluent samples taken in a calendar month. (2) Not more than ten percent (10%) of all samples when not less than ten (10) samples are taken and analyzed for <i>E. coli</i> in a calendar month exceed two hundred thirty-five (235) cfu or MPN per one hundred (100) milliliters as a daily maximum. Under this subdivision, the calculation of ten percent (10%) of the samples taken shall be limited to the lowest whole number result.

The *E. coli* requirements established in the Indiana rules are more stringent than the ORSANCO *E. coli* requirements; therefore, they will be included in the permit. The fecal coliform limit contained in the ORSANCO standards will also be included in the permit; however, since the *E. coli* requirements will be in effect from April through October, the fecal coliform requirements will only be applied from November through March.

### ***Hexachlorobenzene and Hexachlorobutadiene***

To ensure compliance with Indiana Water Quality Standards, the WQBELs for these parameters have been retained from the previous permit. These parameters have been identified as bioaccumulative chemicals of concern (BCC). As BCCs, the water quality criteria for these parameters are applied to the undiluted discharge in accordance with 327 IAC 5-2-11.1(b)(6). These parameters are regulated by 40 CFR 414, resulting in the application of TBELs. However, as part of the 2013 permit renewal, WLA001972 was completed on April 12, 2013, and these parameters were evaluated for RPE. The results of the RPE analysis showed that these parameters had reasonable potential to exceed, therefore, WQBELs were required. The WQBELs and TBELs were compared (see table below) and the more stringent limitations were applied. It was determined that the WQBELs for these parameters were more stringent than the TBELs, and were therefore, the applicable limitations. A new WLA was not requested for the 2023 permit renewal because the water quality criteria applicable to these parameters have not changed. See Section 5.2 of this Fact Sheet for a link to WLA001972.

Parameter	414.91 ELGs (mg/l)		WLA001972 Limits (mg/l)	
	Monthly Avg	Daily Max	Monthly Avg	Daily Max
Hexachlorobenzene	0.015	0.028	0.00000028	0.00000068
Hexachlorobutadiene	0.02	0.049	0.00044	0.0011

## ***Mercury***

Mercury limitations have been retained from the previous permit. As part of the 2013 permit renewal, WLA001972 was completed on April 12, 2013, and Mercury was evaluated for RPE. The results of the RPE analysis showed that Mercury had RPE, therefore, WQBELs were required. See Section 5.2 of this Fact Sheet for a link to WLA001972.

## ***Oil and Grease (O & G)***

Effluent limitations and monitoring requirements for O&G have been retained from the previous permit. The daily maximum limitation of 5 mg/l is based on the limit of quantification (LOQ) for this parameter.

## ***Total Residual Chlorine (TRC)***

Effluent limitations and monitoring requirements for TRC have been retained from the previous permit.

## ***Copper***

Total Copper effluent limitations have been retained from the previous permit. Total Copper is a parameter regulated by 40 CFR 414.91(b), resulting in the application of TBELs. However, as part of the 1997 permit renewal, a WLA report was completed on April 4, 1996, and Total Copper was evaluated for RPE. The results of the RPE analysis showed that Total Copper had RPE, therefore, WQBELs were required.

As part of the 2007 permit renewal, WLA001497 was completed on March 30, 2007, and Total Copper was re-evaluated for RPE. The results of the RPE analysis showed that Total Copper had RPE, therefore, WQBELs were required.

The 1996 copper limits, 2007 copper limits, and current copper TBELs were compared and the more stringent limitations were applied. It was determined that the 1996 WLA has the most stringent monthly average, and is therefore, the applicable limitation. It was also determined that the 2007 WLA has the most stringent daily maximum, and is therefore, the applicable limitation.

A new WLA was not requested for the 2023 permit renewal because the water quality criteria applicable to Copper have not changed. See Section 5.2 of this Fact Sheet for links to the April 4, 1996, and WLA001497.

Parameter	414.91 ELG (mg/l)		415.63 ELG (mg/l)		1996 WLA (mg/l)		2007 WLA (mg/l)	
	Monthly Avg	Daily Max	Monthly Avg	Daily Max	Monthly Avg	Daily Max	Monthly Avg	Daily Max
Copper	1.45	3.38	0.0049	0.012	<b>0.01993</b>	0.04638	0.027	<b>0.039</b>

## **Silver**

As part of the 2013 permit renewal, WLA001972 was completed on April 12, 2013, and Silver was evaluated for RPE. The results of the RPE analysis showed that Silver did not have RPE, therefore, WQBELs were not required. However, since there was an RPE for Silver in the past, the monitoring requirements for Silver were retained in the 2018 permit renewal. This office proposes to retain silver monitoring requirements in the 2023 permit renewal because Outfall 006 has not discharged since 2011 and there is no new data to evaluate. See Section 5.2 of this Fact Sheet for a link to WLA001972.

### **5.3.4 Outfall 007**

#### **Flow**

The effluent flow is to be monitored in accordance with 327 IAC 5-2-13(a)(2).

#### **Temperature**

Temperature monitoring has been retained from the previous permit due to the presence of cooling water in the discharge. Reporting units have been changed to °F.

**Acenaphthene, Acenaphthylene, Acrylonitrile, Anthracene, Benzene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(k)fluoranthene, 3,4-Benzofluoranthene, Bis(2-ethylhexyl)phthalate, Carbon Tetrachloride, Chlorobenzene, Chloroethane, 2-Chlorophenol, Chrysene, Di-n-butyl phthalate, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethylene, 1,2-transDichloroethylene, 2,4-Dichlorophenol, 1,2-Dichloropropane, 1,3-Dichloropropylene, Diethyl phthalate, 2,4-Dimethylphenol, Dimethyl phthalate, 4,6-Dinitro-o-cresol, 2,4-Dinitrophenol, 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, Ethylbenzene, Fluoranthene, Fluorene, Hexachlorobutadiene, Hexachloroethane, Methyl Chloride, Naphthalene, Nitrobenzene, 2-Nitrophenol, 4-Nitrophenol, Phenanthrene, Phenol (4AAP), Pyrene, Toluene, 1,2,4-Trichlorobenzene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethylene, and Vinyl Chloride**

The previous permit's TBELs for the above parameters were originally applied in the 1990 NPDES permit and are more stringent than the TBELs calculated in Appendix A, Tables 5 and 8. Therefore, the TBELs for the above parameters have been retained from the previous permit due to the permittee consistently meeting the 1990 TBELs.

#### **Total Phenols**

Per 40 CFR 122.43, 122.44, 125.3, and Section 402(a)(1) of the Clean Water Act (CWA) permit limitations may be established using Best Professional Judgment (BPJ). Therefore, as provided by law, IDEM established Total Phenols TBELs in the 1985 permit utilizing BPJ to meet the requirements of Best Available Technology Economically Achievable (BAT). The BPJ effluent limitations were 0.7 mg/l monthly average and 1.4



mg/l daily maximum, and the concentration based TBELs were converted to mass-based limits. The mass-based limits have been calculated using the annual average flow from the wastewater treatment plant (6.8 MGD).

### ***BOD5 and Total Suspended Solids (TSS)***

The previous permit's mass based TBELs for BOD5 and TSS were originally applied in the 1990 NPDES permit and are more stringent than the TBELs calculated in Appendix A, Table 8. Therefore, the TBELs for BOD5 and TSS have been retained from the previous permit due to the permittee consistently meeting the 1990 BOD5 and TSS TBELs.

### ***Nickel***

The previous permit's mass based TBELs for Nickel were originally applied in the 1990 NPDES permit and are less stringent than the TBELs calculated in Appendix A, Table 8. the newly calculated TBELs for Nickel have been applied to the permit.

### ***Hexachlorobenzene and Tetrachloroethylene***

The previous permit's TBELs for Hexachlorobenzene and Tetrachloroethylene were originally applied in the 1997 NPDES permit and are more stringent than the Hexachlorobenzene and Tetrachloroethylene TBELs calculated in Appendix A, Table 5. Therefore, the TBELs for Hexachlorobenzene and Tetrachloroethylene have been retained from the previous permit due to the permittee consistently meeting the 1997 Hexachlorobenzene and Tetrachloroethylene TBELs.

### ***Copper***

The previous permit's TBELs for Copper were originally applied in the 1985 NPDES permit and are more stringent than the TBELs calculated in Appendix A, Table 8. Therefore, the TBELs for Copper have been retained from the previous permit due to the permittee consistently meeting the 1985 Copper TBELs.

### ***Total Residual Chlorine (TRC)***

The previous permit's TBELs for TRC were originally applied in the 2013 NPDES permit and are more stringent than the TBELs calculated in Appendix A, Table 6. Therefore, the TBELs for TRC have been retained from the previous permit due to the permittee consistently meeting the 2013 TRC TBELs.

### ***Chloroform and Methylene Chloride***

The previous permit's TBELs for Chloroform and Methylene Chloride were originally applied in the 2013 NPDES permit and are less stringent than the TBELs calculated in Appendix A, Table 6. Therefore, the newly calculated TBELs for Chloroform and Methylene Chloride have been applied to the permit.

### ***Total Chromium, Total Cyanide, Lead and Zinc***

The previous permit's TBELs for Total Chromium, Total Cyanide, Lead, and Zinc were originally applied in the 2018 NPDES permit and are less stringent than the mass based TBELs calculated in Appendix A, Table 5. Therefore, the newly calculated Total Chromium, Total Cyanide, Lead, and Zinc TBELs have been applied to the permit.

### ***Oil & Grease (O&G)***

The previous permit's TBELs for O&G were originally applied in the 2013 NPDES permit and are less stringent than the mass based TBELs calculated in Appendix A, Table 7. The newly calculated TBELs are less than the LOQ for O&G, which equals 5 mg/l. Therefore, compliance will be demonstrated if the effluent concentration measured and reported for Outfall 002 is less than 5 mg/l.

### ***2,2-Bis(4-hydroxyphenol) propane***

As part of the 1990 permit renewal, a Wasteload Analysis (WLA) report was completed on July 4, 1990, and 2,2-Bis(4-hydroxyphenol) propane was evaluated for RPE. The results of the RPE analysis showed that 2,2-Bis(4-hydroxyphenol) propane had RPE, therefore, WQBELs were required and have been retained in the permit. The mass limits applied in the effective permit were originally calculated using a discharge flow of 7.05 MGD and are more stringent than those calculated using the 2023 design flow of 7.6 MGD. In accordance with antibacksliding and antidegradation regulations, the 1990 WQBELs will be retained. See Section 5.2 of this Fact Sheet for a link to the July 4, 1990, WLA report.

### ***Nitro-N-Methyl Phthalimide and Tetrahydrofuran***

Nitro-N-Methyl Phthalimide and Tetrahydrofuran are pollutants of concern. Therefore, reporting requirements for Nitro-N-Methyl Phthalimide and Tetrahydrofuran have been retained from the previous permit.

## **5.4 Whole Effluent Toxicity (WET) Testing**

Whole effluent toxicity (WET) test requirements are included in the NPDES permit to monitor compliance with the narrative water quality criteria under 327 IAC 2-1-6(a)(1)(E) and (a)(2). 327 IAC 2-1-6(a)(1)(E) requires all surface waters at all times and all places, including the mixing zone, to be free from substances, materials, etc. which are in amounts sufficient to be acutely toxic to or to otherwise severely injure or kill aquatic life, other animals, plants, or humans. 327 IAC 2-1-6(2) requires that all waters outside the mixing zone be free of substances in concentrations that on the basis of available scientific data are believed to be sufficient to injure, be chronically toxic to, or be carcinogenic, mutagenic, or teratogenic to humans, animals, aquatic life, or plants.

In addition, under 327 IAC 5-2-11.1(h), IDEM is required to determine whether the discharge causes, or has the reasonable potential to cause or contribute to a violation of these narrative water quality criteria. Therefore, the permittee is required to conduct WET tests to determine the toxicity of the final effluent. The WET test requirement does not negate the requirement to submit a water treatment additive (WTA) application and/or worksheet for replacement or new additives/chemicals proposed for use at the site.

The 2018 Permit required the facility to conduct acute toxicity tests with *Ceriodaphnia dubia*, *Daphnia magna* and *Fathead minnow (Pimephales promelas)* monthly for three (3) consecutive months, and provided no toxicity was shown, conduct acute toxicity tests every six (6) months for the duration of the permit using the species most sensitive to the toxicity in the effluent. The three consecutive monthly tests were completed in December 2018. *Ceriodaphnia dubia* was identified as the most sensitive species, therefore, testing conducted after December 2018 involved only that species.

WET Test results from July 2018 through June 2022 are shown below. The facility passed all tests conducted during this period of review.

Month/Year	Outfall	Species*	Result (TUa)	Toxicity Trigger Level (TUa)	Pass/Fail
September/2018	002	<i>Ceriodaphnia dubia</i>	6.8	9.1	Pass
		<i>Daphnia magna</i>	2.9		Pass
		<i>Pimephales promelas</i>	1.88		Pass
October/2018	002	<i>Ceriodaphnia dubia</i>	1.64	9.1	Pass
		<i>Daphnia magna</i>	1		Pass
		<i>Pimephales promelas</i>	1		Pass
November/2018	002	<i>Ceriodaphnia dubia</i>	1.38	9.1	*
		<i>Daphnia magna</i>	1		*
		<i>Pimephales promelas</i>	1		*
December/2018	002	<i>Ceriodaphnia dubia</i>	1.38	9.1	Pass
		<i>Daphnia magna</i>	2.88		Pass
		<i>Pimephales promelas</i>	1.59		Pass
June/2019	002	<i>Ceriodaphnia dubia</i>	5.65	9.1	Pass
December/2019	002	<i>Ceriodaphnia dubia</i>	1.38	9.1	Pass
June/2020	002	<i>Ceriodaphnia dubia</i>	4.48	9.1	Pass

December/2020	002	<i>Ceriodaphnia dubia</i>	1.3	9.1	Pass
June/2021	002	<i>Ceriodaphnia dubia</i>	5.42	9.1	Pass
December/2021	002	<i>Ceriodaphnia dubia</i>	2.83	9.1	Pass
June/2022	002	<i>Ceriodaphnia dubia</i>	5.82	9.1	Pass

\*November 2018 WET tests may be considered as invalid because the 36-hr hold time of whole effluent had exceed by >3 to >4 hours by the time the WET tests were started.

#### **Outfall 002:**

Acute biomonitoring test frequency at Outfall 002 of once every six months will be retained from the current permit. A value of 0.3 TUa is applied at the edge of the acute mixing zone as the numeric interpretation of the narrative criterion regarding acute toxicity in 327 IAC 2-1-6(a)(1)(E). The acute WET TRE trigger based on a dilution factor of 30.3 is 9.1 TUa.

#### **Outfall 006:**

Acute biomonitoring is required at Outfall 006 when the Ohio River at RM 791.5 is less than 32.3 feet. The permittee may request that IDEM waive testing at Outfall 006 to facilitate repair or replacement of the Outfall 002 diffuser.

### **5.5 Antibacksliding**

Pursuant to 327 IAC 5-2-10(a)(11), unless an exception applies, a permit may not be renewed, reissued or modified to contain effluent limitations that are less stringent than the comparable effluent limitations in the previous permit. None of the limits included in this permit are less stringent than the comparable effluent limitations in the previous permit, therefore, backsliding is not an issue in accordance with 327 IAC 5-2-10(a)(11).

### **5.6 Antidegradation**

Indiana's Antidegradation Standards and Implementation procedures are outlined in 327 IAC 2-1.3. The antidegradation standards established by 327 IAC 2-1.3-3 apply to all surface waters of the state. The permittee is prohibited from undertaking any deliberate action that would result in a new or increased discharge of a bioaccumulative chemical of concern (BCC) or a new or increased permit limit for a regulated pollutant that is not a BCC unless information is submitted to the commissioner demonstrating that the proposed new or increased discharge will not cause a significant lowering of water quality, or an antidegradation demonstration submitted and approved in accordance 327 IAC 2-1.3-5 and 2-1.3-6.

The NPDES permit does not propose to establish a new or increased loading of a regulated pollutant; therefore, the Antidegradation Implementation Procedures in 327 IAC 2-1.3-5 and 2-1.3-6 do not apply to the permitted discharge.

## 5.7 Stormwater

The facility must comply with General Industrial Stormwater Permit INRM00130, which expires 06/30/2023.

## 5.8 Water Treatment Additives

In the event that changes are to be made in the use of water treatment additives that could significantly change the nature of, or increase the discharge concentration of any of the additives contributing to an outfall governed under the permit, the permittee must apply for and obtain approval from IDEM prior to such discharge. Discharges of any such additives must meet Indiana water quality standards. The permittee must apply for permission to use water treatment additives by completing and submitting State Form 50000 (Application for Approval to Use Water Treatment Additives) available at: <https://www.in.gov/idem/forms/idem-agency-forms/> and submitting any needed supplemental information. In the review and approval process, IDEM determines, based on the information submitted with the application, whether the use of any new or changed water treatment additives/chemicals or dosage rates could potentially cause the discharge from any permitted outfall to cause chronic or acute toxicity in the receiving water.

The authority for this requirement can be found under one or more of the following: 327 IAC 5-2-8(11)(B), which generally requires advance notice of any planned changes in the permitted facility, any activity, or other circumstances that the permittee has reason to believe may result in noncompliance with permit requirements; 327 IAC 5-2-8(11)(F)(ii), which generally requires notice as soon as possible of any planned physical alterations or additions to the permitted facility if the alteration or addition could significantly change the nature of, or increase the quantity of, pollutants discharged; and 327 IAC 5-2-9(2) which generally requires notice as soon as the discharger knows or has reason to know that the discharger has begun or expects to begin to use or manufacture, as an intermediate or final product or byproduct, any toxic pollutant that was not reported in the permit application.

The following is a list of water treatment additives currently approved for use at the facility:

Supplier	WTAA	Outfall	Purpose
General Chemical, LLC (1997)	Liquid Alum	002 & 006	Flocculant
Nalco Company	NALCLEAR 7769	002 & 006	Flocculant
Nalco Company	NALCO 2857	002 & 006	Corrosion Inhibitor
Nalco Australia Pty Ltd	NALCO 2895 Plus	002 & 006	Oxygen scavenger
Nalco Company	NexGuard 22310	002 & 006	Boiler water treatment
Nalco Company(2013)	NexGuard 22358	002 & 006	Boiler water treatment
Nalco Company	TRI-ACT 1820	002 & 006	Corrosion Inhibitor
ICL-IP America Inc.	Fuzzicide solution	002 & 006	Biocide
Nalco Company	3D TRASAR 3DT120	002 & 006	Cooling water treatment
Nalco Company	3D TRASAR 3DT177	002 & 006	Corrosion Inhibitor

Nalco Company	3D TRASAR 3DT190	002 & 006	Cooling water treatment
Nalco Company	3D TRASAR 3DT197	002 & 006	Cooling water treatment
Nalco Company	3D TRASAR 3DT265	002 & 006	Corrosion/Scale Inhibitor
Nalco Company	3D TRASAR 289	002 & 006	Cooling water treatment
Nalco Company	3D TRASAR 3DT465	002 & 006	Corrosion/Scale Inhibitor
Nalco Company	NALCO 7346	002 & 006	Microbiological control
Nalco Company	NALCO STABREX ST70	002 & 006	Cooling water treatment
Nalco Company	TRASAR Trac 100	002 & 006	Closed-loop treatment
Nalco Company	NALCO 7330	002 & 006	Biocide
Nalco Company	NALCO 7338	002 & 006	Biocide
Nalco Company	TRASAR TRAC101	002 & 006	Closed loop treatment
GE Betz, Inc.(2007)	AK-110	002 & 006	Membrane cleaner
GE Betz, Inc.	BETZDEARBORN DCL30	002 & 006	Dechlorinating agent
GE Betz, Inc.	BIOMATE MBC2881	002 & 006	Biocide
GE Betz, Inc.	BIOMATE MBC781	002 & 006	Biocide
GE Betz, Inc.	CITRIC ACID 50% CMD	002 & 006	UF modules cleaner
GE Betz, Inc.	HYPERSPERSE MDC700	002 & 006	Membrane deposit control agent
GE Betz, Inc.	KLARAID IC1173	002 & 006	Boiler water coagulant
GE Betz, Inc.	KLEEN MCT411	002 & 006	Membrane cleaner
GE Betz, Inc.	SOLISEP MPT101	002 & 006	Flocculant
GE Betz, Inc.	SOLISEP MPT103	002 & 006	Boiler water pretreatment
Brenntag Canada, Inc.	Ammonia, Aqueous	002 & 006	Nutrient
Nalco Company	CAT-FLOC 8799 PLUS	002 & 006	Coagulant
Sigma-Aldrich	Ferric chloride	002 & 006	Flocculant
Nalco Company	NALCO 1404	002 & 006	Flocculant
Nalco Company	NALCO 7465	002 & 006	Antifoam
ICL Performance Products LP	Phosphoric acid (35%-95%)	002 & 006	Nutrient
Calgon Carbon Corporation	Activated carbon	002 & 006	Organic material removal
Fisher Scientific UK	Sulfuric acid	002 & 006	pH adjustment
Sigma-Aldrich	Sodium bisulfite	002 & 006	Boiler and RO water treatment
Brenntag Canada, Inc.	SODIUM HYPOCHLORITE, 1-15%	002 & 006	Boiler and RO water treatment
Nalco Company	NALCO 8136	002 & 006	Coagulant
Nalco Company	3DT178	002 & 006	Corrosion Inhibitor
Nalco Company	3DT397	002 & 006	Corrosion Inhibitor

Approval is pending for the following water treatment additives. Additional information was requested from the facility on March 21, 2023.

<b>Supplier</b>	<b>WTAA</b>	<b>Outfall</b>	<b>Purpose</b>
Brenntag Mid-South, Inc.	BRENNFLOC BC2381	002 & 006	Flocculant
Brenntag Mid-South, Inc.	UCI-FLOC 1058C	002 & 006	Flocculant
USALCO, LLC	DeIPAC 2020	002 & 006	Flocculant
Nalco Company	NALCO 3DT231	002 & 006	Cooling water treatment
Nalco Company	TOWERBROM 991	002 & 006	Microbiological control
Brenntag Mid-South, Inc.	CITRIC ACID 50% FCC KOSH NSF	002 & 006	UF modules cleaner
GE Betz, Inc.	KLEEN MCT515	002 & 006	RO membrane cleaner
GE Betz, Inc.	KLEEN MCT511	002 & 006	RO membrane cleaner
Kemira Water Solutions, Inc.	KEMIRA PAX-XL8	002 & 006	Flocculant
Air Liquide	Carbon dioxide (Refrigerated Liquid)	002 & 006	pH adjustment
SNF Inc.	FLOQUAT FL4635	002 & 006	Coagulant
Brenntag Mid-South, Inc.	ROBINFLOC 4408	002 & 006	Sludge dewatering
Brenntag Mid-South, Inc.	ANTIFOAM S-010 FG	002 & 006	Antifoam
Nalco Company	NALCO 7346 TAB	002 & 006	Biocide
Nalco Company	NALCO 3DT197	002 & 006	Cooling water treatment
GE Betz, Inc.	SPECTRUS OX103	002 & 006	Biocide
Nalco Company	3D TRASAR 3DT184	002 & 006	Corrosion Inhibitor
Nalco Company	NALCO 1720	002 & 006	Oxygen scavenger
Nalco Company	NALCO 73199	002 & 006	Corrosion Inhibitor
Nalco Company	3D TRASAR 3DT165	002 & 006	Corrosion/Scale Inhibitor
Nalco Company	NALCO 2563	002 & 006	Boiler Antifoam
Nalco Company	Acti-Brom 1318	002 & 006	Biocide
Nalco Company	3D Trasar 3DT179	002 & 006	Corrosion Inhibitor
Nalco Company	3D Trasar 3DT180	002 & 006	Corrosion Inhibitor
GE Betz, Inc.	SOLISEP MPT150	002 & 006	Flocculant
GE Betz, Inc.	SOLISEP MPT100	002 & 006	Flocculant
Suez	Hypersperse MDC775	002 & 006	Antiscalant/antifoulant
Nalco Company	73551	002 & 006	Non-ionic surfactant
Unknown	DSP 600 HXI	002 & 006	Flocculant (short term project)

## 6.0 PERMIT DRAFT DISCUSSION

### 6.1 Discharge Limitations, Monitoring Conditions and Rationale

The proposed final effluent limitations are based on the more stringent of the Indiana water quality-based effluent limitations (WQBELs), technology-based effluent limitations (TBELs), current ORSANCO requirements, or approved total maximum daily loads (TMDLs) and NPDES regulations as appropriate for each regulated outfall. Section 5.3 of this document explains the rationale for the effluent limitations at each Outfall. Analytical and sampling methods used shall conform to the version of 40 CFR 136 as referenced in 327 IAC 5-2-13(d)(1) and 327 IAC 5-2-1.5. Any changes to monitoring conditions are discussed in section 5.3.

#### Outfall 002 (with diffuser):

Parameter	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow Effluent Intake	Report Report	Report Report	MGD MGD	Daily Daily	24 Hr. Total 24 Hr. Total
Cycles of Concentration (COC)	Report	Report	Number	Daily	Report
Acrylonitrile	67	160	ug/l	Annually	Grab
Benzo(a)anthracene	5.0	12	ug/l	Annually	24 Hr. Comp.
Benzo(a)pyrene	5.0	12	ug/l	Annually	24 Hr. Comp.
Benzo(k)fluoranthene	5.0	12	ug/l	Annually	24 Hr. Comp.
3,4-Benzofluoranthene	5.0	12	ug/l	Annually	24 Hr. Comp.
Chrysene	5.0	12	ug/l	Annually	24 Hr. Comp.
Hexachlorobenzene	0.00028	0.00068	ug/l	Annually	24 Hr. Comp.
Hexachlorobutadiene	0.44	1.1	ug/l	Annually	24 Hr. Comp.
Vinyl Chloride	33	80	ug/l	Annually	Grab
Mercury	12	20	ng/l	Annually	Grab
E.coli	125	235	Count/100ml	5 X Month	Grab
Fecal Coliform	2,000	-----	Count/100ml	5 X Month	Grab
Oil & Grease	-----	5	mg/l	Annually	Grab
TRC	0.02	0.04	mg/l	Daily	Grab
Phosphorus	Report	Report	lbs/day & mg/l	2 X Month	Grab
Chloride	Report	Report	mg/l	2 X Month	Grab
Sulfate	Report	Report	mg/l	2 X Month	Grab
Hardness	Report	Report	mg/l	2 X Month	Grab
Whole Effluent Toxicity Acute (with MZ)	Part I.D of permit				

Parameter	Daily Minimum	Daily Maximum	Units	Minimum Frequency	Sample Type
pH	6.0	9.0	Std Units	Continuous	Grab



**Outfall 006 (without diffuser):**

Parameter	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow Effluent Intake	Report Report	Report Report	MGD MGD	Daily Daily	24 Hr. Total 24 Hr. Total
Cycles of Concentration (COC)	Report	Report	Number	Daily	Report
River Stage	-----	Report	Feet	Daily	Report
Acrylonitrile	67	160	ug/l	Annually	Grab
Benzo(a)anthracene	5.0	12	ug/l	Annually	24 Hr. Comp.
Benzo(a)pyrene	5.0	12	ug/l	Annually	24 Hr. Comp.
Benzo(k)fluoranthene	5.0	12	ug/l	Annually	24 Hr. Comp.
3,4-Benzofluoranthene	5.0	12	ug/l	Annually	24 Hr. Comp.
Chrysene	5.0	12	ug/l	Annually	24 Hr. Comp.
Hexachlorobenzene	0.00028	0.00068	ug/l	Annually	24 Hr. Comp.
Hexachlorobutadiene	0.44	1.1	ug/l	Annually	24 Hr. Comp.
Vinyl Chloride	33	80	ug/l	Annually	Grab
Copper	19.9	39	ug/l	1 X Month	24 Hr. Comp.
Mercury	12	20	ng/l	Annually	Grab
Silver	Report	Report	ug/l	1 X Month	24 Hr. Comp.
E.coli	125	235	Count/100ml	5 X Month	Grab
Fecal Coliform	2,000	-----	Count/100ml	5 X Month	Grab
Oil & Grease	-----	5	mg/l	Annually	Grab
TRC	0.02	0.04	mg/l	Daily	Grab
Whole Effluent Toxicity Acute (without MZ)	Part I.D of permit				

Parameter	Daily Minimum	Daily Maximum	Units	Minimum Frequency	Sample Type
pH	6.0	9.0	Std Units	Continuous	Grab

**Outfall 007 (administrative outfall):**

Parameter	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	Report	MGD	Daily	24 Hr. Total
Acenaphthene	1.17	3.13	lbs./day	Annually	24 Hr. Comp.
Acenaphthylene	1.17	3.13	lbs./day	Annually	24 Hr. Comp.
Acrylonitrile	5.09	12.84	lbs./day	Annually	Grab
Anthracene	1.17	3.13	lbs./day	Annually	24 Hr. Comp.
Benzene	1.96	7.21	lbs./day	Annually	Grab
Benzo(a)anthracene	1.17	3.13	lbs./day	Annually	24 Hr. Comp.
Benzo(a)pyrene	1.22	3.24	lbs./day	Annually	24 Hr. Comp.
Benzo(k)fluoranthene	1.17	3.13	lbs./day	Annually	24 Hr. Comp.
3,4-Benzofluoranthene	1.22	3.24	lbs./day	Annually	24 Hr. Comp.
Bis(2-ethylhexyl)phthalate	5.46	14.80	lbs./day	Annually	24 Hr. Comp.
2,2-Bis(4-hydroxyphenol) propane	80.82	188.03	lbs./day	1 X Month	24 Hr. Comp.
BOD <sub>5</sub>	1,494	3,938	lbs./day	Daily	24 Hr. Comp.
Carbon Tetrachloride	0.96	2.02	lbs./day	1 X Month	Grab
Chlorobenzene	0.80	1.49	lbs./day	Annually	Grab
Chloroethane	5.52	14.22	lbs./day	Annually	Grab
Chloroform	1.19	2.61	lbs./day	1 X Month	Grab
2-Chlorophenol	1.64	5.20	lbs./day	1 X Month	24 Hr. Comp.
Total Chromium	5.15	12.85	lbs./day	1 X Month	24 Hr. Comp.
Chrysene	1.17	3.13	lbs./day	Annually	24 Hr. Comp.
Total Copper	4.25	9.11	lbs./day	1 X Month	24 Hr. Comp.
Total Cyanide	1.95	5.57	lbs./day	1 X Month	Grab
Di-n-butyl phthalate	1.43	3.02	lbs./day	Annually	24 Hr. Comp.
1,2-Dichlorobenzene	4.08	8.65	lbs./day	Annually	Grab
1,3-Dichlorobenzene	1.64	2.33	lbs./day	Annually	Grab
1,4-Dichlorobenzene	0.80	1.49	lbs./day	Annually	Grab
1,1-Dichloroethane	1.17	3.13	lbs./day	Annually	Grab
1,2-Dichloroethane	3.61	11.19	lbs./day	Annually	Grab
1,1-Dichloroethylene	0.85	1.33	lbs./day	Annually	Grab
1,2-trans-Dichloroethylene	1.11	2.86	lbs./day	Annually	Grab
2,4-Dichlorophenol	2.07	5.94	lbs./day	1 X Month	24 Hr. Comp.
1,2-Dichloropropane	8.12	12.20	lbs./day	Annually	Grab
1,3-Dichloropropylene	1.54	2.33	lbs./day	Annually	Grab
Diethyl phthalate	4.30	10.77	lbs./day	Annually	24 Hr. Comp.
2,4-Dimethylphenol	0.96	1.91	lbs./day	Annually	24 Hr. Comp.
Dimethyl phthalate	1.01	2.49	lbs./day	Annually	24 Hr. Comp.
4,6-Dinitro-o-cresol	4.14	14.69	lbs./day	1 X Month	24 Hr. Comp.
2,4-Dinitrophenol	3.77	6.52	lbs./day	1 X Month	24 Hr. Comp.
2,4-Dinitrotoluene	5.99	15.12	lbs./day	Annually	24 Hr. Comp.
2,6-Dinitrotoluene	13.53	34.00	lbs./day	Annually	24 Hr. Comp.
Ethylbenzene	1.70	5.73	lbs./day	Annually	Grab.

Fluoranthene	1.33	3.61	lbs./day	Annually	24 Hr. Comp.
Fluorene	1.17	3.13	lbs./day	Annually	24 Hr. Comp.
Hexachlorobenzene	0.39	0.92	lbs./day	Annually	24 Hr. Comp.
Hexachlorobutadiene	1.06	2.60	lbs./day	Annually	24 Hr. Comp.
Hexachloroethane	1.11	2.86	lbs./day	Annually	24 Hr. Comp.
Lead	2.86	6.59	lbs./day	Annually	24 Hr. Comp.
Methyl Chloride	4.56	10.08	lbs./day	Annually	Grab
Methylene chloride	2.27	5.05	lbs./day	1 X Month	Grab
Naphthalene	1.17	3.13	lbs./day	Annually	24 Hr. Comp.
Nickel	9.97	21.04	lbs./day	1 X Month	24 Hr. Comp.
Nitrobenzene	1.43	3.61	lbs./day	Annually	24 Hr. Comp.
Nitro-N-Methyl Phthalimide	Report	Report	lbs./day	1 X Month	24 Hr. Comp.
2-Nitrophenol	2.18	3.66	lbs./day	1 X Month	24 Hr. Comp.
4-Nitrophenol	3.82	6.58	lbs./day	1 X Month	24 Hr. Comp.
Oil & Grease	284[1]	284[1]	lbs./day	Annually	Grab
Phenanthrene	1.17	3.13	lbs./day	Annually	24 Hr. Comp.
Phenol	0.80	1.38	lbs./day	1 X Month	24 Hr. Comp.
Total Phenols	39.72	79.44	lbs./day	1 X Month	24 Hr. Comp.
Pyrene	1.33	3.55	lbs./day	Annually	24 Hr. Comp.
Temperature	Report	Report	°F	Daily	Grab
Tetrahydrofuran	Report	Report	lbs./day	1 X Month	24 Hr. Comp.
Tetrachloroethylene	1.17	2.97	lbs./day	Annually	Grab
Toluene	1.38	4.24	lbs./day	1 X Month	Grab
TRC	3.76	6.19	lbs./day	Daily	Grab
1,2,4-Trichlorobenzene	3.61	7.43	lbs./day	Annually	24 Hr. Comp.
1,1,1-Trichloroethane	1.11	2.86	lbs./day	Annually	Grab
1,1,2-Trichloroethane	1.11	2.86	lbs./day	Annually	Grab
Trichloroethylene	1.11	2.86	lbs./day	Annually	Grab
TSS	2,358	7,576	lbs./day	Daily	24 Hr. Comp.
Vinyl Chloride	5.52	14.22	lbs./day	Annually	Grab
Zinc	4.87	12.11	lbs./day	1 X Month	24 Hr. Comp.

[1] Compliance will be demonstrated if the effluent concentration measured and reported for Outfall 002 is less than 5 mg/l.

## 6.2 Schedule of Compliance

The circumstances in this NPDES permit do not qualify for a schedule of compliance.

## **6.3 Clean Water Act Section 316(b) Cooling Water Intake Structure(s) (CWIS)**

### **6.3.1 Introduction**

Section 316(b) of the Clean Water Act requires that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available (BTA) for minimizing adverse environmental impact.

The EPA promulgated a CWA section 316(b) regulation on August 15, 2014, which became effective on October 14, 2014. 79 Fed. Reg. 48300-439 (August 15, 2014). This regulation established application requirements and standards for cooling water intake structures. The regulation is applicable to point sources with a cumulative design intake flow (DIF) greater than 2 MGD where 25% or more of the water withdrawn (using the actual intake flow (AIF)) is used exclusively for cooling purposes. All existing facilities subject to these regulations must submit the information required by 40 CFR 122.21(r)(2)–(r)(8) and facilities with an actual intake flow of greater than 125 MGD must also submit the information required by 40 CFR 122.21(r)(9)–(r)(13). The regulation establishes best technology available standards to reduce impingement and entrainment of aquatic organisms at existing power generation and manufacturing facilities.

Impingement is the process by which fish and other aquatic organisms are trapped and often killed or injured when they are pulled against the cooling water intake structures (CWIS's) outer structure or screens as water is withdrawn from a waterbody. Entrainment is the process by which fish larvae and eggs and other aquatic organisms in the intake flow enter and pass through a CWIS and into a cooling water system, including a condenser or heat exchanger, which often results in the injury or the death of the organisms (see definitions at 40 CFR 125.92(h) and (n)).

Intake water for the SABIC Innovative Plastics Mt. Vernon, LLC facility is taken from a single intake, located on the right descending bank of the Ohio River between river miles (RM) 831 and 832, which is immediately downstream from Mt. Vernon, Indiana. The CWIS is located at Latitude 37° 54' 34.3", Longitude -87° 55' 13.2". The facility is a continuous operation, therefore, the CWIS is used continuously 365 days a year. Outages occur only when equipment failure requires shutdown for repairs and on the rare occasions when modifications are made to the system.

## Aerial Photograph of Water Intake Location



The DIF for the permittee is 12.495 MGD. The AIF, as defined under 40 CFR 125.92(a), is the average volume of water withdrawn on an annual basis by the cooling water intake structures over the past five years. The actual intake flow for the facility from January 2018 through December 2022 is 8.0 MGD as shown below.

Year	Annual Average Flow (MGD)
2018	7.9
2019	7.9
2020	7.3
2021	8.3
2022	8.5
Intake 5 Year Average	8.0

According to the application, 34% of the DIF is used for cooling purposes at the facility, which equals 4.2483 MGD (34% of 12.495). Using an AIF of 8.0 MGD, if 4.2483 MGD is used for cooling, then 53% of the AIF is used for cooling purposes.

Therefore, since the facility has a DIF greater than 2 MGD, and because the percentage of flow used at the facility exclusively for cooling is greater than 25%, the facility is required to meet the BTA standards for impingement and entrainment mortality, including any measures to protect Federally-listed threatened and endangered species and designated critical habitat established under 40 CFR 125.94(g).

As an existing facility with a DIF greater than 2 MGD and because the AIF is less than or equal to 125 MGD, the permittee was required to submit the application information required by 40 CFR 122.21(r)(2) through (r)(8). The permittee submitted a complete 316(b) application on January 13, 2023, with the permit renewal application.

The regulation also established requirements that build on existing CWA requirements to coordinate with the U.S. Fish and Wildlife Service prior to issuing NPDES permits. Pursuant to 40 CFR 125.98(h), upon receipt of an NPDES permit 316(b) application for an existing facility subject to the rule, the Director (IDEM) must forward a copy of the permit application to the appropriate Field Office of the U.S. Fish and Wildlife Service for a 60-day review. A copy of this permit application was sent to the Bloomington Field Office of the U.S. Fish and Wildlife Service (USFWS) January 17, 2023. IDEM contacted the USFWS on March 23, 2023, to inquire if comments would be provided, and was referred to comments provided by the USFWS on January 18, 2022. The January 2022 comments apply to several Ohio River dischargers, including the SABIC Innovative Plastics Mt. Vernon, LLC facility. No new comments were provided. The USFWS comments are summarized in Section 6.3.6 and included Appendix B of this Fact Sheet.

Much of the factual and narrative information presented below was taken, sometimes directly, from the permittee's 316(b) application.

### **6.3.2 Previous BTA Determination**

As part of the 2018 permit renewal, IDEM concluded that the existing cooling water intake structure at the SABIC Innovative Plastics Mt. Vernon, LLC facility represents the best technology available (BTA) to minimize adverse environmental impact in accordance with Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326) based on information available at that time.

For compliance with the impingement mortality BTA requirement, IDEM determined that the facility operated a closed cycle mechanical recirculating system as specified by 40 CFR 125.94(c)(1) and that the maximum design through screen intake velocity was less than 0.5 fps as specified by 40 CFR 125.94(c)(2).

For compliance with the entrainment mortality BTA requirement, IDEM determined that the facility operated a closed cycle recirculating system.

### **6.3.3 Facility and Cooling Water Intake Structure (CWIS) Description**

#### **A. Narrative Description of the Configuration of the Cooling Water Intake Structure**

The intake description has not changed since the 2018 Permit was issued.

The water intake includes an array of five cylindrical wedgewire screen T-assemblies set in approximately 30 feet of water (at pool elevation of 342 ft-amsl), roughly 200 feet offshore. Each of the five T-shaped screen assemblies is made up of two cylindrical screened sections along the horizontal axis that are attached to a vertical central pipe. The horizontal axis of the “T” is aligned parallel to the centerline of the river. One 20-inch screened section is up-stream of the vertical pipe and the other 20-inch screened section is downstream. The two screened sections and central pipe are 5 feet 10 inches long (overall) and 21 inches in diameter and a 10-inch-long cone is attached to the upstream end of the assembly. The wedgewire screen mesh openings are 0.25 inches wide (‘slot-width’) and 1.5 inches high, separated by 1/8-inch (3.2 mm) wire wrap. The central pipe has flanged tee connections equidistant from each end for attachment from the collector to the intake pipe that transports the water to the facility. Each tee assembly is connected to a 14-inch diameter intake pipe.

Water flows through the screens and pipe tees, which are connected to the intake pipes by a 90-degree elbow, and through the approximately 200-foot-long intake pipes to the water make-up pump. There is a dedicated pump connected to each of the five intake pipes. The pumps that supply water from the intake structure to the plant and their design flow rates are shown in Table 2. The pumps are not equipped with variable frequency drive motors and therefore operate at a fairly steady rate. The pumps have a combined design intake flow capacity of 12.495 MGD when all five pumps are in operation.

<b>Table 2. Intake Pump Design Capacities</b>		
<b>Pump Number</b>	<b>Design Flow (GPM)</b>	<b>Design Flow (MGD)</b>
Pump No. 1	1,735 GPM	2.5 MGD
Pump No. 2	1,735 GPM	2.5 MGD
Pump No. 3	1,735 GPM	2.5 MGD
Pump No. 4	1,735 GPM	2.5 MGD
Pump No. 5	1,735 GPM	2.5 MGD
Maximum Total Daily Operation <sup>2</sup>	8,675 GPM	12.495 MGD
Notes: GPM – gallons per minute; MGD – million gallons per day; Source: SABIC (2022a). Totals may vary from individual pump flows due to rounding.		

The actual intake flow for the facility from January 2018 through December 2022 is 8.0 MGD.

Monthly streamflow data was obtained for the Ohio River at the J.T. Myers lock and dam for the years 2017 through 2021. The mean annual flow for this period is 222,874 ft<sup>3</sup>/s or 144,047 MGD. The maximum percentage of the water body withdrawn (0.018%) occurs in August.

Intake water from the Ohio River is pumped through a treatment system that provides removal of suspended solids by settling and filtration processes, and disinfection by addition of sodium hypochlorite. This water (Millwater) is pumped to storage for use across the Facility. The main uses for the treated water are as cooling water, as process water, for scrubbing systems, and for general facility housekeeping. The facility processes for which Millwater is used for cooling water includes cooling tower make-up, chilled water system make-up, and cooling baths for

finished products. Cooling tower make-up water and the chilled water system comprise the bulk of the cooling water usage. Cooling baths for finished products use a relatively small proportion of the cooling water. The cooling towers and chilled water systems onsite are closed-cycle (i.e., employ closed-cycle recirculating systems [CCRS]), and the cooling baths are once-through systems.

## **B. Closed-Cycle Recirculating System (CCRS) Description**

The CCRS consists of nine cooling tower systems with mechanical draft cooling towers that are used to dissipate heat from the respective facility cooling system. The CCRS is designed to provide cooling water to the facility to remove heat from the heat cycle of the associated processes, and to collect the heated water and transfer it to the cooling tower for dissipation of the heat to the atmosphere. The heated water from the areas in the facility requiring cooling water is pumped to the cooling towers' elevated distribution lines and is cooled via evaporation by the air current created by the towers' fans as it flows down through the fill material to the basins. The heated water vapor rises through the cooling towers and discharges into the atmosphere as a vapor plume. Water losses in the system are offset by treated makeup water from the CWIS.

The CCRS includes a blowdown system to control the dissolved solids concentration in the circulating water. The cooling towers typically operate between 3.3 to 10.6 cycles of concentration, based on available conductivity data for the makeup water and respective circulating water systems (SABIC 2022c). This is higher than the minimum 3.0 cycles of concentration that EPA deems as minimizing makeup and blowdown flows for closed-cycle recirculating systems with makeup water provided from a freshwater source, according to the Preamble to the Rule. Thus, the facility minimizes make-up and blowdown flows withdrawn from the Ohio River to support cooling uses, as defined at §125.92.

## **C. Intake Flows, Velocity of Intake Flows Through Submerged Intake Openings, Velocity of Intake Flows Through Traveling Screens and Area of Influence**

The through-screen velocity (TSV) through the cylindrical wedgewire screens has been calculated at the DIF (12.49 MGD) as 0.36 feet per second (fps).

Each pump has a 'dedicated' suction line with a cylindrical wedgewire screen in the Ohio River. The pumps are not equipped with variable frequency drive motors and therefore operate at a fairly steady rate. The maximum actual through screen velocity is therefore the same as the maximum design through screen velocity.

The velocity calculations from the permittee's 316(b) application are below.



**SABIC INNOVATIVE PLASTICS, MT. VERNON FACILITY  
THROUGH-SCREEN VELOCITY CALCULATION - CWIS**

**Calculation Purpose:**

1. Calculate the design through-screen velocity for the cooling water intake structure.

**Calculation Objectives:**

1. Identify the screen physical parameters and design intake flow rate.
2. Calculate the proportion of open screen area to screen surface area.
3. Calculate the design through-screen velocity.

**System Description:**

SABIC Innovative Plastics, Mt. Vernon, LLC (SABIC) is located at One Lexan Lane, Mt. Vernon, Indiana Posey County. The SABIC Mt. Vernon cooling water intake structure provides a continuous supply of water from the Ohio River for the Facility to generate electricity for internal demand and also for use in various chemical manufacturing processes.

**Calculation Methodology:**

The through-screen velocity will be calculated using formulas for cylindrical wedgewire screens adapted from Pankrantz, 1988.

$$V = Q / (SL * OA * D * PI) \quad \text{(Formula 1)}$$

where:

Q = flow rate, per screen, in cubic feet per second (cfs)

V = through-screen velocity in feet per second (fps)

SL = Screened/perforated length of the screen (ft)

OA = proportion of screen open area to total screen area

D = diameter of screen (ft)

PI = 3.14159

$$\text{and } OA = (W \times H) / ((W + d) \times (H + h)) \quad \text{(Formula 2)} \quad \text{(Ref 3)}$$

where:

w = screen horizontal (shute) wire diameter in inches (in)

W = width of screen opening (in)

h = wire wrap thickness

H = height of slot opening

The CWA 316(b) Existing Facilities Rule impingement mortality standard will be met at SABIC if the design through-screen velocity is equal to or less than 0.5 feet per second

**SABIC INNOVATIVE PLASTICS, MT. VERNON FACILITY  
THROUGH-SCREEN VELOCITY CALCULATION - CWIS**

**Design Inputs:**

1a. Design Water Withdrawal Rate	12.49 MGD	19.33 cfs	8,675 gpm	
Makeup 1	2.50 MGD	3.87 cfs	1,735 gpm	(Ref 1)
Makeup 2	2.50 MGD	3.87 cfs	1,735 gpm	(Ref 1)
Makeup 3	2.50 MGD	3.87 cfs	1,735 gpm	(Ref 1)
Makeup 4	2.50 MGD	3.87 cfs	1,735 gpm	(Ref 1)
Makeup 5	2.50 MGD	3.87 cfs	1,735 gpm	(Ref 1)
Total Intake Flow	12.49 MGD	19.33 cfs	8,675 gpm	
1b. Maximum Actual Intake Flow	10.94 MGD	16.92 cfs	7,597 gpm	(Ref 1)
2. Number of screens (at DIF)		5		(Ref 1)
3. Design Water Withdrawal Rate (per screen)		3.87 cfs		
4. Total Screen Equipment Length		5.8 feet		(Ref 2)
5. Screened Length (perforated sections)		3.3 feet		(Ref 2)
6. Screen Diameter		1.75 feet		(Ref 2)
7. Water Height (Depth)	Assume screen is fully submerged at all times			
8. Slot opening (width)		6 mm		
		0.250 inch		(Ref 2)
10. Wedgewire Thickness		0.1250 inch		(Ref 2)
11. Slot opening (height)		0.7500 inch		(Ref 2)
11. Wedgewire 'Wrap' Thickness		0.0938 inch		(Ref 2)

**Assumptions:**

- Screens are fully submerged at all times when pumps are operating.
- The DIF consists of five pumps operating at the same time
- The circular screen end caps are solid sheet metal and are not screened.
- The wedgewire is assumed to be 1/8" thick.
- The wedgewire wrap (along longitudinal axis) is 3/32" thick
- Each pump has a 'dedicated' suction line with a cylindrical wedgewire screen in the Ohio River. The Q per screen at the 5-year maximum AIF is therefore the same as at the DIF

**References:**

- SABIC Innovative Plastics, Mt. Vernon Facility: Report on the Assessment of Best Technology Available for Minimizing Adverse Environmental Impact under § 316(b) of the Clean Water Act. December, 2022.
- Hand Drawn Notes - Millwater Intake Screens Inspection 10/25/2013.

**Summary and Conclusions:**

- The calculated design through-screen velocity for the CWIS is **0.36 fps.**
- CWIS meets the BTA standards for impingement mortality at §125.94(c)(2) since the calculated velocity is less than 0.5 fps.

**SABIC INNOVATIVE PLASTICS, MT. VERNON FACILITY  
THROUGH-SCREEN VELOCITY CALCULATION - CWIS**

**Calculations:**

**1. Screen Physical Parameters and Design Intake Flow Rate**

**Formulas Used:**  
none

<b>Given:</b>		DIF	Max. AIF
	Q=	3.87	3.87 cfs per screen
	d=	0.1250	0.1250 in
	W=	0.250	0.250 in
	h=	0.094	0.094 in
	H=	0.750	0.750 in
	D=	1.75	1.75 ft
	SL=	3.3	3.3 ft

**2. Proportion of Open Screen Area to Total Screen Area**

**Formulas Used:**  
Formula 2

**Given:**  
screen parameters as above

**Calculate:**

and  $OA = (W \times H) / ((W + d) \times (H + h))$  **0.5926**

**3. Design Through-screen Velocity**

**Formulas Used:**  
Formula 1

**Given:**  
screen parameters as above and calculated screen open area proportion

**Calculate:**

		DIF	Max. AIF
$V = Q / (SL \times OA \times D \times PI) =$		<b>0.36</b>	<b>0.36 fps</b>

**4. Approach Velocity**

**Given:**  
screen parameters

**Calculate:**

		DIF	Max. AIF
$V = Q / (SL \times D \times PI) =$		<b>0.21</b>	<b>0.21 fps</b>

**Prepared By:**

AECOM  
Conshohocken, PA  
December 2023

## **Area of Influence**

No physical studies were performed to determine the intake area of influence (AOI) within the waterbody. A desktop analysis was performed to calculate the approximate AOI within the 0.5 feet per second (fps) velocity contour. The United States Environmental Protection Agency (USEPA) considers an intake velocity of 0.5 fps to be a de minimis value relative to significant impingement concerns because fish have the swimming ability to overcome this velocity and avoid impingement. Since the SABIC intake incorporates cylindrical wedge-wire screens that were designed to maintain the maximum design through-screen velocity below 0.5 fps which meets best technology available (BTA) standards for impingement mortality at §125.94(c)(2), the area of influence of the cooling water intake does not extend past the face of the wedgewire screens.

### **6.3.4 Source Water Biological Characterization**

ORSANCO regularly collects fish survey data on the Ohio River and major Ohio River tributaries. Available data were compiled from the John T. Myers pool of the Ohio River in 2015. Data collection occurred via boat-mounted electrofishing system along 0.5 kilometer electrofishing survey reaches. All fish were identified to the lowest taxa practical, measured for length, and recorded as number of individuals by species. The elapsed time of each electroshocking event was also recorded. The facility is located between river miles (RM) 831 and 832; hence, ORSANCO data collected immediately adjacent to the facility from RM 831.6 to 831.9 from August 5-6, 2015, were used to characterize fishes in the vicinity of the CWIS.

A total of 407 individuals across 27 fish species were observed adjacent the facility in August 2015 (Table 3). Of these species, the following 15 fishes accounted for 95% of the electroshocking collections (ranked in order of decreasing abundance):

- sauger
- bluegill
- longear sunfish
- spotfin shiner
- river shiner
- spotted bass
- gizzard shad
- channel shiner
- bullhead minnow
- river carpsucker
- freshwater drum
- smallmouth buffalo
- channel catfish
- flathead catfish
- emerald shiner

Of these 15 fishes, sauger, bluegill, longear sunfish, spotfin shiner, river shiner, and spotted bass comprise 75% of the collection and are considered dominant species adjacent to the facility. The shiners are considered forage fishes, whereas the bass is considered recreationally important (USEPA, 2002). Gizzard shad is the only fragile species (40 CFR 125.92(m)) to be identified adjacent to the facility.

### **6.3.5 Impingement and Entrainment– Aquatic Life Studies**

No site-specific facility impingement or entrainment data were available for review. Fish surveys conducted adjacent to the facility by ORSANCO were, however, available for review. The data needed to prepare 40 CFR §122.21(r)(4)(ii) through (vi) were obtained from the following sources:

- ORSANCO Ohio River Electrofishing Catch Data for August 5 and 6, 2015, from RM 831.6 to 831.9.
- Ohio River power plant impingement and entrainment studies (King et al., 2010; Perry et al., 2003; U.S. Environmental Protection Agency [USEPA], 2002).
- The life history characteristics of local fish and shellfish species, which are well-established, were obtained from the scientific literature.
- U.S. Fish & Wildlife Service (USFWS) Information for Planning, and Conservation Tool (IPaC) Trust Resources List Report (USFWS, 2022).
- Indiana Department of Natural Resources: Indiana Endangered, Threatened and Rare Species List for Posey County (IDNR, 2022).

#### **A. Impingement**

Most impinged fishes are juvenile or age-1 individuals; adults of smaller fishes can also be impinged. In the Ohio River, lower impingement rates are exhibited by demersal fishes, or those species associated with near-bottom covered habitats (King et al., 2010). The susceptibility to impingement is dependent on both biotic and abiotic factors (Baker, 2007; King et al., 2010) (Table 4). Biotic factors that may result in the increased likelihood of impingement include nearshore spawning and pelagic behavior during early life stages (Saalfeld, 2006). Also, the timing of spawning can influence impingement; the reproduction and peak abundance of most Ohio River fishes occurs during the months of March through May. Some abiotic factors that can influence impingement are water temperature and dissolved oxygen (Baker, 2007). In their study of Ohio River power plant impingement, King et al. (2010) identified water temperature as the most important physical variable, with impingement tending to increase during the winter, whereas pumping rate was one of the least important factors.

#### **B. Entrainment**

The exposure of aquatic organisms to entrainment occurs as a function of the location, design, construction, capacity, and operation of the facility CWIS (USEPA, 1976). Taxa most susceptible to entrainment are those with pelagic life stages with little to no swimming ability (Ferry-Graham et al., 2008). The peak egg recruitment of most Ohio River fishes occurs during early spring, while larval recruitment occurs primarily in the late spring and early summer. The USEPA (2004) assumes that the through-plant mortality of entrained organisms is 100%.

## C. Summary

The entrainment and impingement of most species identified adjacent to the facility is unlikely because the facility has implemented several measures consistent with BTA to minimize fish entrainment and impingement:

- CCRS.
- Offshore intake.
- ¼-inch (6.35 mm) aperture wedgewire screens.
- Through-screen velocity off <0.5 fps under Design Intake Flow conditions (0.36 fps).

Although entrainment and impingement are unlikely, 40 CFR §122.21(r)(4)(iii) requires the “Identification of the species and life stages that would be most susceptible to impingement and entrainment”. The selection of fishes susceptible to impingement and entrainment was based on a qualitative weight-of-evidence approach that incorporated multiple lines of evidence: (1) the historical fish survey data collected adjacent to the facility by ORSANCO; (2) population modeling for eight Ohio River power plants (Perry et al., 2003); (3) the main Ohio River fishes susceptible to entrainment and impingement identified by USEPA (2002) in the Case Study Analysis for the Proposed Section 316(b) Existing Facilities Rule Part C - E; and (4) fishes identified by King et al. (2010) as commonly impinged by Ohio River power plants.

Based on the available literature and fish survey data, the ichthyoplankton (eggs and larvae) of 8 fishes are deemed potentially susceptible to impingement and entrainment by the Facility CWIS (Table 6).

Table 6: Fishes Susceptible to Impingement and Entrainment	
Scientific Name	Common Name
<i>Sander canadensis</i>	sauger
<i>Lepomis macrochirus</i>	bluegill
<i>Lepomis megalotis</i>	longear sunfish
<i>Cyprinella spiloptera</i>	spotfin shiner
<i>Notropis biennius</i>	river shiner
<i>Micropterus punctulatus</i>	spotted bass
<i>Dorosoma cepedianum</i>	gizzard shad
<i>Aplodinotus grunniens</i>	freshwater drum

Except for freshwater drum, which has pelagic eggs and larvae, entrainment and impingement effects are unlikely give the presence of BTA. A rationale regarding the likelihood of entrainment and impingement is presented in Table 7.

**Table 7: Rationale for Taxa and Life Stages Susceptible to Impingement and Entrainment at the Facility**

Common Name	Susceptible to Entrainment?	Lines of Evidence	Susceptible to Impingement?	Lines of Evidence
sauger	Unlikely	<b>Eggs:</b> Unlikely; eggs either attach to vegetation or sink to the muddy bottom. <b>Larvae:</b> Unlikely; wedgewire screens with a TSV <0.5 fps.	Unlikely	<b>Juveniles:</b> Unlikely. Wedgewire screens with a TSV <0.5 fps.
bluegill	Unlikely	<b>Eggs:</b> Unlikely; Eggs are demersal and adhesive. <b>Larvae:</b> Unlikely. Wedgewire screens with a TSV <0.5 fps.	Unlikely	<b>Juveniles:</b> Unlikely. Wedgewire screens with a TSV <0.5 fps.
longear sunfish	Unlikely	<b>Eggs:</b> Unlikely; Eggs are demersal and adhesive. <b>Larvae:</b> Unlikely. Wedgewire screens with a TSV <0.5 fps.	Unlikely	<b>Juveniles:</b> Unlikely. Wedgewire screens with a TSV <0.5 fps.
spotfin shiner	Unlikely	<b>Eggs:</b> Unlikely; eggs are deposited in crevices and are adhesive. <b>Larvae:</b> Unlikely. Wedgewire screens with a TSV <0.5 fps.	Unlikely	<b>Juveniles:</b> Unlikely. Wedgewire screens with a TSV <0.5 fps.
river shiner	Unlikely	<b>Eggs:</b> Unlikely; most members of the genus <i>Notropis</i> are classified as broadcast spawners, scattering eggs over the substrate. <b>Larvae:</b> Unlikely. Wedgewire screens with a TSV <0.5 fps.	Unlikely	<b>Juveniles:</b> Unlikely. Wedgewire screens with a TSV <0.5 fps.
spotted bass	Unlikely	<b>Eggs:</b> Unlikely; eggs are adhesive	Unlikely	<b>Juveniles:</b> Unlikely. Wedgewire screens with a TSV <0.5 fps.

Table 7: Rationale for Taxa and Life Stages Susceptible to Impingement and Entrainment at the Facility				
Common Name	Susceptible to Entrainment?	Lines of Evidence	Susceptible to Impingement?	Lines of Evidence
		<b>Larvae:</b> Unlikely. Wedgewire screens with a TSV <0.5 fps.		
gizzard shad	Unlikely	<b>Eggs:</b> Unlikely; Eggs are demersal and adhesive. <b>Larvae:</b> Unlikely. Wedgewire screens with a TSV <0.5 fps.	Unlikely	<b>Juveniles:</b> Unlikely. Wedgewire screens with a TSV <0.5 fps.
freshwater drum	Potentially (eggs and larvae)	<b>Eggs:</b> Potentially; Eggs are pelagic and are smaller than the aperture size of the wedgewire screen. <b>Larvae:</b> Newly hatched larvae are pelagic and have limited swimming ability.	Unlikely	<b>Juveniles:</b> Unlikely. Wedgewire screens with a TSV <0.5 fps.

### **6.3.6 Protected Species Susceptible to Impingement and Entrainment**

#### **A. Endangered and Threatened Species, Regulatory Background**

EPA's 316(b) regulations do not authorize take, as defined by the Endangered Species Act, 16 U.S.C. 1532(19). The U.S. Fish and Wildlife Service has determined that any impingement (including entrapment) or entrainment of Federally-listed species constitutes take. See Note to 40 CFR 125.90 and 40 CFR 125.98(j).

Pursuant to 40 CFR 125.94(a)(1); "the owner or operator of an existing facility with a cumulative design intake flow (DIF) greater than 2 mgd is subject to the BTA (best technology available) standards for impingement mortality under [40 CFR 125.94(c)], and entrainment under [40 CFR 125.94(d)] including any measures to protect Federally-listed threatened and endangered species and designated critical habitat established under [40 CFR 125.94(g)]."

Pursuant to 40 CFR 125.98(h), upon receipt of an NPDES permit 316(b) application for an existing facility subject to the rule, the Director (IDEM) must forward a copy of the permit application to the appropriate Field Office of the U.S. Fish and Wildlife Service for a 60-day review. In part, the expectation is that the Services will respond within 60 days and provide to the Director (1) any corrections to the list of Federally-listed threatened and endangered species and critical habitat included in the permit application, (2) any measures that the Services recommend (including monitoring and reporting) for the protection of listed species, including any measures that would minimize any incidental take of listed species, and/or avoid likely jeopardy to a listed species or destruction or adverse modification of critical habitat, and/or (3) notify the State that the Services have no corrections to the list of species and critical habitat and/or that the Services do not recommend any control measures.



Pursuant to 40 CFR 125.94(g); IDEM may establish in the permit additional control measures, monitoring requirements, and reporting requirements that are designed to minimize incidental take, reduce or remove more than minor detrimental effects to Federally-listed species and designated critical habitat, or avoid jeopardizing Federally-listed species or destroying or adversely modifying designated critical habitat (e.g., prey base). Such control measures, monitoring requirements, and reporting requirements may include measures or requirements identified by an appropriate Field Office of the U.S. Fish and Wildlife Service during the 60-day review period pursuant to §125.98(h) or the public notice and comment period pursuant to 40 CFR 124.10. Where established in the permit by IDEM, the owner or operator must implement any such requirements.

Under both 40 CFR 125.96(g) and 125.97(g), when IDEM requires additional measures to protect Federally-listed threatened or endangered species or designated critical habitat pursuant to 40 CFR 125.94(g), IDEM must require monitoring and reporting associated with those measures.

Pursuant to 40 CFR 125.98(k), IDEM must submit at least annually to the appropriate EPA Regional Office facilities' annual reports submitted pursuant to §125.97(g), for compilation and transmittal to the Services.

Pursuant to 40 CFR 125.98(d), IDEM may require additional study and monitoring if a threatened or endangered species has been identified in the vicinity of the intake.

## **B. Permittee's Endangered and Threatened Species Review from 316(b) Application**

The permittee's 316(b) report contained the following information with respect to endangered, threatened, special concern and fragile species:

Queries were conducted of federal and state databases to identify threatened, endangered, and other protected species potentially in the vicinity of the facility.

### **Federal: U.S. Fish & Wildlife Service (USFWS) Information for Planning, and Conservation Tool (IPaC) Trust Resources List Report (USFWS, 2022).**

This report provides an automatically generated list of terrestrial, wetland, and aquatic species and other resources such as critical habitat, i.e., trust resources that are known or expected to be on or near the project area. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. Only fish and shellfish are relevant to this discussion. The search area focused on a reach of the Ohio River adjacent to the facility. Species that were identified with the IPaC search are eight federally endangered and one threatened shellfish; no federally listed fishes were identified (Table 8).

**Table 8. Threatened and Endangered Species Identified with the IPaC Search.**

Genus and Species	Common Name	Federal Status	Habitat Preferences
<i>Pleurobema clava</i>	clubshell	E	The clubshell is found in streams and small rivers, in well oxygenated riffles with coarse sand and gravel and little silt. In Michigan, runs where it was observed had water currents of 0.06-0.25 meters per second.
<i>Cyprogenia stegaria</i>	fanshell	E	Fanshells occur in a variety of substrates including sand, gravel, cobble, and mixed materials on the bottoms of streams and rivers. They generally require free-flowing, clean, well oxygenated water. Fanshells live in the sediment beneath large rivers. This mussel is found in medium to large rivers. It buries itself in sand or gravel in deep water of moderate current, with only the edge of its shell and its feeding siphons exposed.
<i>Potamilus capax</i>	fat pocketbook	E	Within the Ohio River system, the present general distribution of the fat pocketbook has been reported from the borders of Indiana, Illinois, and Kentucky, especially its tributary the Wabash River in Indiana and Illinois.
<i>Epioblasma rangiana</i>	northern riffleshell	E	Northern riffleshell occur in fine to coarse gravel areas of swift current riffle and runs.
<i>Plethobasus cooperianus</i>	orangefoot pimpleback (pearlymussel)	E	The orangefoot pimpleback is native to the Tennessee, Cumberland, and lower Ohio Rivers, where its distribution has declined over 70%. The orangefoot pimpleback is found in clean, deep, fast-flowing water of medium to large rivers. The bottom substrate usually silt-free rubble, gravel or mixed sand and gravel. They live on the stream bottom, often completely burying themselves in the substrate leaving only their siphons exposed.
<i>Lampsilis abrupta</i>	pink mucket (pearlymussel)	E	The pink mucket occurs in large stream reaches where flowing water covers substrates of cobble, gravel, and sand. The depth of the water can range in depth from one inch to five feet.

Table 8. Threatened and Endangered Species Identified with the IPaC Search.			
Genus and Species	Common Name	Federal Status	Habitat Preferences
<i>Quadrula cylindrica cylindrica</i>	Rabbitsfoot	T	Typically found in small to medium sized rivers of moderate current with clear, relatively shallow water and a mixture of sand and gravel substrates. Three species of minnows have been determined to be suitable hosts: <i>Cyprinella galctura</i> , <i>Cyprinella spiloptera</i> , and <i>Hybopsis amblops</i> .
<i>Obovaria retusa</i>	ring pink (mussel)	E	Preferred habitat is present in medium and large-sized rivers. Gravel and sand bars are preferred substrates. The ring pink occurs in the Ohio River south of Gallipolis and the Muskingum River.
<i>Pleurobema plenum</i>	rough pigtoe	E	This species is found in medium to large rivers ( $\geq 20$ m wide) in sand, gravel, and cobble substrates in shoals. It is occasionally found on flats and muddy sand.

**State: Indiana Department of Natural Resources: Indiana County Endangered, Threatened and Rare Species List (Posey County).**

The potential for endangered, threatened, or special concern plants and animals or exemplary natural communities to occur was assessed with an online species list by county compiled by the Indiana Department of Natural Resources (IDNR). The county lists identify terrestrial, wetland, and aquatic taxa; only fish and shellfish are relevant to this discussion.

**Fishes**

Fishes identified by IDNR as potentially occurring within Posey County are identified in Table 9. None of these fishes were observed in ORSANCO sampling conducted adjacent to the Facility in August 2015.

Table 9. Threatened and Endangered Fish Species Identified by IDNR within Posey County.				
Genus and Species	Common Name	Federal Status	State Status <sup>(1)</sup>	Habitat Preferences
<i>Acipenser fulvescens</i>	lake sturgeon	--	SE	Lake sturgeon are generally benthic species and occur in large rivers and shallow areas of large lakes. They are most often associated with unvegetated deep run and pool habitats (>5ft) in rivers. In lakes,

**Table 9. Threatened and Endangered Fish Species Identified by IDNR within Posey County.**

Genus and Species	Common Name	Federal Status	State Status <sup>[1]</sup>	Habitat Preferences
				habitat use varies and depends on availability. Spawning often occurs in gravel bottom streams, but rocky, wave-swept lake shore and islands areas are also used when riverine habitats are unavailable.
<i>Ammocrypta clara</i>	western sand darter	--	SE	The western sand darter is found in medium to large rivers that have moderate to swift currents, primarily over extensive areas of sandy substrate. It is generally found in water that ranges from about .2-.9 meters in depth. Water preference of the western sand darter is for clear to slightly turbid water.
<i>Crystallaria asprella</i>	crystal darter	Species of Concern	Not Described	The crystal darter prefers clear to slightly turbid waters over sand substrates. This darter is most often found in moderate to strong currents in large rivers where they occupy sandy riffles, bars, and pools. Spawning occurs from mid-May through mid-June.
<i>Elassoma zonatum</i>	banded pygmy sunfish	--	SSC	Throughout its range, this species frequents lentic waters, e.g., lake margins, sloughs, sluggish streams, and lowland backwaters. This species also prefers clear quiet water with thick growths of submerged vegetation.
<i>Percina evides</i>	gilt darter	--	SE	The gilt darter occurs in riffles of medium- to large-sized streams, with strong to moderate currents, and is generally most abundant in the deeper portions of its habitat. This species also requires streams with relatively strong, year-round flow and clean gravel and cobble substrates for spawning.
Notes: [1]. State: SE = state endangered; ST = state threatened; SR = state rare; SSC = state species of special concern; SX = state extirpated; SG = state significant.				

## Shellfish

Shellfish identified by IDNR as potentially occurring within Posey County are identified below; extirpated species are not presented (Table 10).

Table 10. Threatened and Endangered Shellfish Species Identified by IDNR within Posey County.			
Genus and Species	Common Name	State Status <sup>(1)</sup>	Habitat Preferences
<i>Cyprogenia stegaria</i>	eastern fanshell pearlymussel	SE	Characteristic habitat is medium to large streams. It has been found in river habitats with gravel substrates and a strong current, in both deep and shallow water. In the Ohio drainage it has been found in the deep channel of the Ohio River between Cincinnati and Pittsburgh.
<i>Epioblasma triquetra</i>	snuffbox	SE	The snuffbox inhabits sand, gravel, or cobble substrates in swift small and medium-sized rivers. Individuals are often buried deep in the sediment.
<i>Obovaria subrotunda</i>	round hickorynut	SE	The round hickorynut is typically found in medium to large rivers. The round hickorynut generally is found in sand and gravel substrates in areas with moderate flow.
<i>Plethobasus cyphus</i>	sheepnose	SE	The sheepnose mussel inhabits a wide variety of habitats in large river systems and streams. This species is typically found in shallow areas with moderate to swift currents flowing over sand and gravel. Additionally, they have been found in areas containing mud, cobble, boulders and in deep cuts.
<i>Pleurobema clava</i>	clubshell	SE	The clubshell is found in streams and small rivers, in well oxygenated riffles with coarse sand and gravel and little silt. In Michigan, runs where it was observed had water currents of 0.06-0.25 meters per second.
<i>Pleurobema plenum</i>	rough pigtoe	SE	The rough pigtoe is a big-river shoal species, and is found in deeper waters of streams 66 ft (20 m) wide or wider. It buries itself in the gravel or sandy bottom with only the posterior margin of the shell and siphons exposed to the water.
<i>Potamilus capax</i>	fat pocketbook	SE	The fat pocketbook is generally found in large rivers and has been found in a broad range of habitat and substrate types. This species prefers a mixture of silt, mud and sand, or sticky mud.
<i>Theliderma cylindrica</i>	rabbitsfoot	SE	This species is found in small to medium sized rivers of moderate current with clear, relatively shallow water and a mixture of sand and gravel substrates
<i>Villosa fabalis</i>	rayed bean	SE	The rayed bean is found in lakes and small to large streams. Substrates include mud, sand and gravel. This species may also be associated with water willow stands.



Table 10. Threatened and Endangered Shellfish Species Identified by IDNR within Posey County.			
Genus and Species	Common Name	State Status <sup>(1)</sup>	Habitat Preferences
<i>Lampsilis ovata</i>	pocketbook	SSC	Found in larger rivers with loose to firmly-packed sand, gravel-sand, or silty sand substrates
<i>Ligumia recta</i>	black sandshell	SSC	The black sandshell is found in rivers, lakes, and large streams, usually in riffles or raceways with good current. Preferred substrates include sandy mud, firm sand, or gravel. This species is relatively uncommon throughout its range and has significantly declined in some states. The decline is believed to be associated with a decline in sauger (the host fish species).
<i>Pleurobema cordatum</i>	Ohio pigtoe	SSC	This species can be found in strong currents on substrates of sand and gravel.
<i>Ptychobranchus fasciolaris</i>	kidneyshell	SSC	The kidneyshell is usually found in small to medium rivers, usually in areas with fairly good flow. In general substrates it inhabits include sand and/or gravel.
<i>Simpsonaias ambigua</i>	salamander mussel	SSC	This species is usually only found where its host, <i>Necturus maculosus</i> is found, in areas of silt or sand within medium to large rivers or lakes. They are often under large flat stones, where their hosts occur
<i>Toxolasma lividus</i>	purple lilliput	SSC	The purple lilliput is in fast flowing small streams and medium sized rivers. Substrates where it has been observed had sand and gravel.
<i>Arcidens confragosus</i>	rock pocketbook	Not Described	NatureServe Explorer. 2017. This species is found in mud and sand bottom pools in medium to large rivers in standing or slow flowing water. It is typical of large lowland streams with little or no flow and a substrate of mud or mud and fine sand.
Notes: [1]. State: SE = state endangered; ST = state threatened; SR = state rare; SSC = state species of special concern; SX = state extirpated; SG = state significant.			

## C. U.S. Fish and Wildlife Service Endangered Species Review

A copy of the permit renewal application was sent to the Bloomington Field Office of the U.S. Fish and Wildlife Service on January 17, 2023. On March 23, 2023, U.S. Fish and Wildlife Service's responded and referred IDM to its January 18, 2022, comments and recommendations.

### 1. U.S. Fish and Wildlife Service Endangered Species Review

On January 18, 2022, the U.S. Fish and Wildlife Service submitted comprehensive endangered species 316(b) review for eight facilities with intakes on the Ohio River. This document is attached to this Fact Sheet as Appendix B. Based on its evaluation, the U.S. Fish and Wildlife Service made the following determinations:

## Mussel Life Cycle and Injury Overview

Freshwater mussels are sessile, filter feeding, long-lived bivalve mollusks, found in river bottoms and lake beds. They have a life cycle that is complex and dependent on the existence and survival of host fish to complete it. Once fertilized, freshwater mussels begin their life as parasitic microscopic larvae called glochidia. Glochidia, which are about the size of a grain of salt, are released by the female mussels and attach themselves to the gills, fins, and scales of their host fish. Post attachment, if they survive, they are encapsulated by fish tissue, relying on the host fish for transportation as they transform into juvenile mussels. Once they metamorphosize into juvenile mussels, they detach from the host, settle into the sediments, and begin their lives as free living mussels.

It should be noted that some freshwater mussels are generalists while a few species rely on specific host species to help carry out that life cycle, therefore, a mussel species' distribution is directly related to its host fish distribution.

Several species of threatened and endangered mussels are found in the Ohio River, although distribution and numbers are reduced (Table 1).

Table 1. Federally Threatened and Endangered mussels found in the Ohio River.

Pink mucket (pearlymussel)	<i>Lampsilis abrupta</i>	
Snuffbox mussel	<i>Epioblasma triquetra</i>	
Sheepnose Mussel	<i>Plethobasus cyphus</i>	
Rabbitsfoot	<i>Quadrula cylindrica cylindrica</i>	
Fanshell (pearlymussel)	<i>Cyprogenia stegaria</i>	
Fat pocketbook	<i>Potamilus capax</i>	
Rayed Bean	<i>Villosa fabalis</i>	
Round hickorynut	<i>Obovaria subrotunda</i>	proposed
Longsolid	<i>Fusconaia subrotunda</i>	proposed

USFWS developed its biological opinion (BO) May 19, 2014 entitled *Endangered Species Act Section 7 Consultation Programmatic Biological Opinion on the U.S. Environmental Protection Agency's Issuance and Implementation of the Final Regulations Section 316(b) of the Clean Water Act* for this consultation. The ESA consultation allows USFWS to make recommendations to IDEM as IDEM administers the permitting of CWA § 316(b) facilities throughout Indiana. To minimize direct and indirect effects to federally-listed species, IDEM can place additional requirements into its permits.

The injured natural resources relative to the Ohio River 316(b) facilities are sheepnose (*Plethobasus cyphus*), fat pocketbook (*Potamilus capax*) and Rabbitsfoot (*Quadrula cylindrica cylindrica*) which occur within the "action area" as defined in the ESA Consultation, May 19, 2014).

- Through entrainment and or impingement, each of these facilities have ongoing impacts to host fish.
- While some facilities have documented impacts to host fish at various life stages, others have described potential impacts to glochidia narratively. And yet, all of these

facilities impact millions of aquatic organisms each year.

- Many facilities deny impacts to endangered mussels, but that is largely because they fail to consider the reproductive life cycle of freshwater mussels.
- We estimate that between 1 and 3 host fish containing sheepsnose glochidia are currently being taken by each of these facilities each year.

The U.S. Fish and Wildlife Service also summarized the Endangered Species Act (ESA) and stated:

Incidental take of endangered species (and threatened species, as applicable, under 16 U.S.C. 1533(d)) is prohibited under the ESA (16 U.S.C. 1538), unless it is permitted (16 U.S.C. 1539(a)) or exempted (16 U.S.C. 1536(o)) by the Services. Absent such exemption or permit, any facility operating under the authority of this Rule must not take federally threatened or endangered species.

More specifically, for the permittee, the U.S. Fish and Wildlife Service determined the following for the SABIC Innovative Plastics Mt. Vernon, LLC facility:

<b>Facts and Assumptions</b>	<b>SABIC</b>
Based on best information available, we assume sheepsnose mussels are in the "action area" as defined by the EPA / FWS ESA consultation. The action area includes where the mussels are found and where the host fish can roam	Off bank (12.5 MGD)
Mussel present / likely to be present	Nearby
Habitat for host fish (cyprinid minnows ) near intakes	Good
Presence of some host fish species near intakes confirmed (# species present)	Yes
We assume some host fish are "infected" with sheepsnose glochidia in the "action area".	Yes
Direct impacts that could reduce successful sheepsnose reproduction:	
Intakes can interrupt mussel gamete dispersal (% per year)	6%
Intakes can entrain conglutinates (% per year)	2%
Intakes can entrain "infected" host fish (# per year)	1
Indirect impacts that could reduce successful sheepsnose reproduction:	
Intakes reduce host fish populations via reduced recruitment	Yes
Thermal discharge can adversely impact timing of reproductive maturation among males and females	Not quantified



## **2. U.S. Fish and Wildlife Service Recommendations to Minimize Take**

To minimize the take of mussels, the U.S. Fish and Wildlife Service requested that IDEM require the permittee to implement or otherwise support a freshwater mussel augmentation project. Freshwater mussel augmentation efforts must be designed and completed in close coordination with knowledgeable experts and appropriate agency contacts. Mussel restoration through the freshwater mussel augmentation project will minimize take of the Ohio River freshwater mussel population and will address the natural resource injury to Federally-listed species under requirements of the Clean Water Act § 316(b).

## **3. U.S. Fish and Wildlife Service Sheepnose Mussel Augmentation Plan**

The freshwater mussel augmentation plan can be implemented by the permittee, or in this case, the permittee may contribute funds to a project undertaken by Indiana's state and federal Natural Resource Trustees because the trustees have particular expertise in these matters. The project will encompass freshwater mussel propagation efforts to increase numbers of freshwater mussels and locate them in a manner that benefits the species and minimizes the significance of additional impacts from 316(b) facilities.

## **D. IDEM Evaluation and Implementation of the U.S. Fish and Wildlife Service Recommendations**

In accordance with 40 CFR 125.94(g), IDEM has evaluated the comments provided by the U.S. Fish and Wildlife Service and agrees that a freshwater mussel augmentation project is an appropriate mechanism to minimize the take of endangered mussels.

To implement the U.S. Fish and Wildlife Service recommendations, IDEM is proposing to require that the permittee contribute to a project to implement an Indiana Freshwater Mussel Augmentation Plan project (the Project) that will be undertaken by the State and Federal Natural Resource Trustees. Alternatively, the permittee will be required to individually develop and implement a freshwater mussel augmentation project.

The Project will establish a framework for the propagation, augmentation, and establishment of freshwater mussels and will be undertaken by the State and Federal Natural Resource Trustees after the permittee has paid an allocation to address this impact. The permittee's allocation for the implementation of this Project is \$33,333.33. If after implementation of the Project, the U.S. Fish and Wildlife Service determines that additional augmentation efforts are needed to meet the Project's success criteria, the U.S. Fish and Wildlife Service may determine an additional allocation is needed from the permittee. This additional amount will be no more than 25% of the permittee's original allocation share.

If the permittee develops and implements a freshwater mussel augmentation project, it would likely consist of the following components: Administrative and Permitting, Brood Stock Acquisition, Propagation effort, Quantitative Processing (tagging), Release Site Reconnaissance Habitat Assessment, and Monitoring augmentation site(s). Each step should be well documented and the documentation available to the public at the appropriate point. More specifically, these components would include the following:

### *Administrative and Permitting*

There will be planning, permitting, coordination with Indiana biologists, federal agency biologists, and also hatchery propagation specialists.

### *Brood Stock Acquisition*

Brood stock acquisition is a necessary step in the augmentation process. This can be accomplished in various ways, but the key is coordination with Indiana biologists, federal agency biologists, and also hatchery propagation specialists. Networking within this growing community of practice will be key to accomplishing this task.

### *Propagation*

Propagation in a laboratory / hatchery should be done by experienced qualified facilities that have routinely worked with rare mussels. A suitable grow out period of likely 3 plus years is expected. They have to be of a sufficient size in order to be tagged. This also gives them a greater chance of living to reproductive maturity.

### *Quantitative Processing*

After a sufficient period of growing out juvenile mussels, an effort to tag mussels so that they can be monitored is important. This involves using adhesives and pit tags and the acquisition of the equipment needed to detect pit tags.

### *Release Site Reconnaissance Habitat Assessment*

Some reconnaissance and habitat assessment should be undertaken in the planning phase of this project so that returning grown out, pit tagged sheepsnose to the Ohio River environs can be optimized for success.

### *Monitoring Augmentation Sites*

Monitoring mussel augmentation sites should take place a year after and two years after mussels have been placed in the Ohio River. As previously mentioned, these monitoring efforts should be well documented to allow the U.S. Fish and Wildlife Service to evaluate the success of augmentation of sheepsnose mussels as a measure to minimize take associated with the permittee's facility on the Ohio River

IDEM has included a reopening clause in the permit that will allow IDEM to modify the permit, after public notice and opportunity for hearing, to incorporate a requirement that the permittee develop and implement a Freshwater Mussel Augmentation Plan consistent with the U.S. Fish and Wildlife Service Recommendations under Section 6.3.6., above and Appendix B of this Fact Sheet if the permittee does not contribute its allocated share to the Project within six months of the effective date of the permit or if, after implementation of the Project, the permittee does not contribute an additional sum within six months after the date that the amount is calculated by the U.S. Fish and Wildlife Service and provided to the permittee, if additional work is needed to meet the Project's success criteria (the additional sum shall be no more than 25% of the permittee's original allocated share), or if IDEM does not receive sufficient funds for the group Project by December 1, 2024.

### **6.3.7 Best Technology Available (BTA) Determinations**

#### **A. Impingement BTA**

Under 40 CFR 125.94(c) existing facilities subject to the rule must comply with one of the following seven BTA Standards for Impingement Mortality:

1. Operate a closed-cycle recirculating system as defined at 40 CFR §125.92;
2. Operate a CWIS that has a maximum design through-screen design intake velocity of 0.5 fps;
3. Operate a CWIS that has a maximum actual through-screen intake velocity of 0.5 fps;
4. Operate an offshore velocity cap that is a minimum of 800 feet offshore;
5. Operate a modified traveling screen that the Director (IDEM) determines meets the definition of the rule (at §125.92(s)) and that the Director (IDEM) determines is BTA for impingement reduction;
6. Operate any other combination of technologies, management practices, and operational measures that the Director (IDEM) determines is BTA for impingement reduction; or
7. Achieve the specified impingement mortality performance standard of less than 24 percent.

The permittee has proposed to comply with alternatives 1 and 2, above.

Under alternative 1, the permittee must operate a closed-cycle recirculating system as defined at 40 CFR 125.92. In addition, the permittee must monitor the actual intake flows at a minimum frequency of daily. The monitoring must be representative of normal operating conditions, and must include measuring cooling water withdrawals, make-up water, and blowdown volume. In lieu of daily intake flow monitoring, the permittee may monitor the cycles of concentration at a minimum frequency of daily. The permit will specify the permittee's selected compliance method for this alternative (monitor actual intake flows or cycles of concentration).

Under alternative 2, the permittee must operate a cooling water intake structure that has a maximum design through-screen intake velocity of 0.5 feet per second. The permittee must submit information to IDEM that demonstrates that the maximum design intake velocity as water passes through the structural components of a screen measured perpendicular to the screen mesh does not exceed 0.5 feet per second. The maximum velocity must be achieved under all conditions, including during minimum ambient source water surface elevations (based on BPJ using hydrological data) and during periods of maximum head loss across the screens or other devices during normal operation of the intake structure.

IDEM has determined that the existing cooling water intake system is BTA for impingement mortality based on the use of a closed-cycle recirculating system as well as the intake having a design through-screen intake velocity of less than 0.5 feet per second.

## B. Entrainment BTA

For existing facilities, EPA did not identify any single technology or group of technology controls as available and feasible for establishing national performance standards for entrainment. Instead, EPA's regulations require the permitting agency to make a site-specific determination of the best technology available standard for entrainment for each individual facility. See 40 CFR 125.94(d).

EPA's regulations put in place a framework for establishing entrainment requirements on a site-specific basis, including the factors that must be considered in the determination of the appropriate entrainment controls. These factors include the number of organisms entrained, emissions changes, land availability, and remaining useful plant life as well as social benefits and costs of available technologies when such information is of sufficient rigor to make a decision. These required factors are listed under 40 CFR 125.98(f)(2).

EPA's regulations also establish factors that may be considered when establishing site-specific entrainment BTA requirements, including: entrainment impacts on the waterbody, thermal discharge impacts, credit for flow reductions associated with unit retirements, impacts on reliability of energy delivery, impacts on water consumption, and availability of alternative sources of water. (40 CFR 125.98(f)(3))

The permittee has proposed that the station's use of cooling towers, which are a closed cycle recirculating system as defined in §125.92, are BTA for entrainment.

### Must and May Factor Discussion (40 CFR 125.98(f)(2) and (3))

#### 1. MUST FACTORS (40 CFR 125.98(f)(2))

##### i. Numbers and types of organisms entrained, including, specifically, the numbers and species (or lowest taxonomic classification possible) of Federally-listed, threatened and endangered species, and designated critical habitat (e.g., prey base);

The SABIC Innovative Plastics Mt. Vernon, LLC facility operates a closed-cycle recirculating system (cooling towers) and utilizes Wedgewire Intake Screens. Both these technologies significantly reduce the number and type of organisms that could be entrained.

In addition to reducing the volume of water through use of closed cycle cooling, the cylindrical wedgewire screens used at the facility exclude fish, which, combined with the low intake velocity and sweep velocity of the Ohio River, reduces entrainment.

ii. Impact of changes in particulate emissions or other pollutants associated with entrainment technologies;

Closed cycle recirculating mechanical draft cooling towers do typically have impacts to air. However, IDEM has determined, based on existing data, that the cooling towers do not pose significant issues regarding the emission of particulates or other pollutants. SABIC Innovative Plastics Mt. Vernon, LLC is currently permitted a Part 70 (Title V) Operating Permit, Operation Permit No. T129-30384-00002, by the Office of Air Quality (OAQ) of IDEM.

iii. Land availability insofar as it relates to the feasibility of entrainment technology;

The cooling towers are already in place; therefore, land availability is not an issue.

iv. Remaining useful plant life; and

There are no plans to retire or close any part of this facility over the next 5 years.

v. Quantified and qualitative social benefits and costs of available entrainment technologies when such information on both benefits and costs is of sufficient rigor to make a decision.

The permittee is not required to provide a Cost Evaluation Study (40 CFR 122.21(r)(10)) or Benefits Evaluation (40 CFR 122.21(r)(11)) because the AIF is less than 125 MGD.

The facility utilizes a closed-cycle recirculating system for the majority of their cooling water.

2. MAY FACTORS (40 CFR 125.98(f)(3))

i. Entrainment impacts on the waterbody;

Entrainment impacts on the waterbody are expected to be minimal based on use of wedgewire screens and closed cycle cooling which minimizes the volume of needed intake water. The amount of water withdrawn by the SABIC Innovative Plastics Mt. Vernon, LLC facility for cooling and process water is 0.006% of the mean annual flow of the Ohio River; the facility's design intake flow is 0.009% of the mean annual flow.

ii. Thermal discharge impacts;

Thermal discharge impacts are minimized given that the facility employs closed-cycle cooling.

iii. Credit for reductions in flow associated with the retirement of units occurring within the ten years preceding October 14, 2014;

No reductions in flow have occurred at the facility in this period.

iv. Impacts on the reliability of energy delivery within the immediate area;

Impacts on reliability of energy delivery and impacts on water consumption are either not applicable or were not considered due to lack of information.

v. Impacts on water consumption; and

By utilizing a closed-cycle recirculating system (cooling towers), the permittee has reduced the water withdrawal rate by at least 95% compared to a once-through system.

vi. Availability of process water, gray water, wastewater, reclaimed water, or other waters of appropriate quantity; and, quality for reuse as cooling water

Availability of process water, gray water, wastewater, reclaimed water, or other waters of the appropriate quantity and quality for reuse as cooling water was not applicable.

### **6.3.8 Best Technology Available (BTA) Impingement and Entrainment Determination Summary**

**A. Impingement Mortality BTA:**

IDEM has determined that the facility is in compliance with 40 CFR 125.94(c)(1) by operating a closed cycle recirculating system (CCRS) as defined at 40 CFR §125.92(c).

In addition, IDEM has determined that the facility is in compliance with 40 CFR 125.94(c)(2) by operating a cooling water intake structure that has a maximum design through screen intake velocity of less than 0.5 fps.

**B. Entrainment Mortality BTA:**

After considering all the factors that must and may be considered by the federal rules (see discussion above), IDEM has determined that the existing facility meets BTA for entrainment mortality since the facility utilizes a closed-cycle recirculating system (CCRS) that meets the definition of a CCRS under the federal rules.

### **6.3.9 Permit Conditions**

The permittee must comply with the following cooling water intake structure requirements:

1. In accordance with 40 CFR 125.98(b)(1), nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act.

2. The permittee must at all times properly operate and maintain the cooling water intake structure and associated intake equipment.
3. The permittee must inform IDEM of any proposed changes to the CWIS or proposed changes to operations at the facility that affect the information taken into account in the current BTA evaluation.
4. Any discharge of intake screen backwash must meet the minimum narrative limitations contained in Part I.B of the permit. There must be no discharge of debris from intake screen washing which will settle to form objectionable deposits which are in amounts sufficient to be unsightly or deleterious, or which will produce colors or odors constituting a nuisance.
5. The permittee must monitor the actual intake flow at a minimum frequency of daily. The monitoring must be representative of normal operating conditions. These data must be reported on the DMRs and MMRs. Further, the permittee shall submit an annual summary of the actual intake flows measured at a minimum frequency of daily.
6. The permittee must monitor and report its cycles of concentration at its cooling towers at a minimum frequency of daily. These data must be reported on the DMRs and MMRs. Further, the permittee shall submit an annual summary of the cycles of concentration measured at a minimum frequency of daily.
7. The permittee must either conduct visual inspections or employ remote monitoring devices to conduct inspections of its cooling water intake structure during the period the cooling water intake structure is in operation as required by 40 CFR 125.96(e). Except as specifically provided in this provision, the permittee must conduct such inspections at least weekly to ensure that any technologies operated to comply with 40 CFR 125.94, including its cooling towers, are maintained and operated to function as designed including those installed to protect Federally-listed threatened or endangered species or designated critical habitat. At least twice a year (January – June and July – December) the permittee must conduct a thorough cleaning and inspection of the intake structure screens by employing a dive team. Alternative procedures can be approved if this requirement is not feasible (e.g., an offshore intake, velocity cap, or during periods of inclement weather).
8. The permittee must contribute \$33,333.33 (permittee's original allocated share) to the Indiana Freshwater Mussel Augmentation Plan project (the Project), within six months of the effective date of the permit. If necessary, the permittee shall contribute an additional sum to the Project, as calculated by the U.S. Fish and Wildlife Service, not to exceed \$8,333.33, within six months of receiving written notice of the requirement for the additional contribution. This will be determined after implementation of the Project and if additional work is needed to meet the Project's success criteria. The permittee shall submit annual reports to IDEM by January 31 of each year detailing the payment(s) made (if any) to the Project in the preceding year.

Within 30 days of payment, documentation of the payment(s) shall be provided to the IDEM, Office of Water Quality, NPDES Permits Branch, Industrial NPDES Permit Section at [OWQWWPER@idem.in.gov](mailto:OWQWWPER@idem.in.gov) and the Compliance Branch at [wwReports@idem.in.gov](mailto:wwReports@idem.in.gov). Documentation must include a reference to the permit and permit condition.

9. In accordance with 40 CFR 125.97(c), by January 31 of each year, the permittee must submit to the Industrial NPDES Permit Section IDEM-OWQ an annual certification statement for the preceding calendar year signed by the responsible corporate officer as defined in 40 CFR 122.22 (see 327 IAC 5-2-22) subject to the following:
  - a. If the information contained in the previous year's annual certification is still pertinent, you may simply state as such in a letter to IDEM and the letter, along with any applicable data submission requirements specified in this section shall constitute the annual certification.
  - b. If you have substantially modified operation of any unit at your facility that impacts cooling water withdrawals or operation of your cooling water intake structures, you must provide a summary of those changes in the report. In addition, you must submit revisions to the information required at 40 CFR 122.21(r) in your next permit application.
10. BTA determinations for entrainment mortality and impingement mortality at cooling water intake structures will be made in each permit reissuance in accordance with 40 CFR 125.90-98. The permittee must submit all the information required by the applicable provisions of 40 CFR 122.21(r)(2) through (r)(8) with the next renewal application. Since the permittee has submitted the studies required by 40 CFR 122.21(r), the permittee may, in subsequent renewal applications pursuant to 40 CFR 125.95(c), request to reduce the information required if conditions at the facility and in the waterbody remain substantially unchanged since the previous application so long as the relevant previously submitted information remains representative of the current source water, intake structure, cooling water system, and operating conditions. Any habitat designated as critical or species listed as threatened or endangered after issuance of the current permit whose range of habitat or designated critical habitat includes waters where a facility intake is located constitutes potential for a substantial change that must be addressed by the owner/operator in subsequent permit applications, unless the facility received an exemption pursuant to 16 U.S.C. 1536(o) or a permit pursuant to 16 U.S.C. 1539(a) or there is no reasonable expectation of take. The permittee must submit the request for reduced cooling water intake structure and waterbody application information at least **two years and six months** prior to the expiration of the NPDES permit. The request must identify each element in this subsection that it determines has not substantially changed since the previous permit application and the basis for the determination. IDEM has the discretion to accept or reject any part of the request.
11. The permittee must submit and maintain all the information required by the applicable provisions of 40 CFR 125.97.



12. The permittee must keep records of all submissions that are part of its permit application until the subsequent permit issued to document compliance with 40 CFR 125.95. If IDEM approves a request for reduced permit application studies under 40 CFR 125.95(a) or (c) or 40 CFR 125.98(g), the permittee must keep records of all submissions that are part of the previous permit application until the subsequent permit is issued.
13. All required reports must be submitted to the IDEM, Office of Water Quality, NPDES Permits Branch, Industrial NPDES Permit Section at [OWQWWPER@idem.in.gov](mailto:OWQWWPER@idem.in.gov) and the Compliance Branch at [wwReports@idem.in.gov](mailto:wwReports@idem.in.gov).

## **6.4 Best Management Practices (BMP) Plan Requirements**

In accordance with 327 IAC 5-9-2, dischargers who use, manufacture, store, handle, or discharge any pollutant listed as toxic under Section 307(a)(1) of the CWA, any pollutant listed as hazardous under Section 311 of the CWA, or on a case-by-case basis, other materials which may cause pollution if they are discharged, are subject to the requirements of this rule for all activities which may result in significant amounts of those pollutants reaching waters of the state.

During the term of this permit, the permittee shall operate the facility in accordance with the current BMP Plan or in accordance with subsequent amendments to the plan. The BMP Plan Requirements are included in Part III of the Permit.

## **6.5 Spill Response and Reporting Requirement**

Reporting requirements associated with the Spill Reporting, Containment, and Response requirements of 327 IAC 2-6.1 are included in Part II.B.2.(d), Part II.B.3.(c), and Part II.C.3. of the NPDES permit. Spills from the permitted facility meeting the definition of a spill under 327 IAC 2-6.1-4(15), the applicability requirements of 327 IAC 2-6.1-1, and the Reportable Spills requirements of 327 IAC 2-6.1-5 (other than those meeting an exclusion under 327 IAC 2-6.1-3 or the criteria outlined below) are subject to the Reporting Responsibilities of 327 IAC 2-6.1-7.

It should be noted that the reporting requirements of 327 IAC 2-6.1 do not apply to those discharges or exceedances that are under the jurisdiction of an applicable permit when the substance in question is covered by the permit and death or acute injury or illness to animals or humans does not occur. In order for a discharge or exceedance to be under the jurisdiction of this NPDES permit, the substance in question (a) must have been discharged in the normal course of operation from an outfall listed in this permit, and (b) must have been discharged from an outfall for which the permittee has authorization to discharge that substance.

## 6.6 Permit Processing/Public Comment

Pursuant to IC 13-15-5-1, IDEM will publish the draft permit document online at <https://www.in.gov/idem/public-notice/>. Additional information on public participation can be found in the "Citizens' Guide to IDEM", available at <https://www.in.gov/idem/resources/citizens-guide-to-idem/>. A 30-day comment period is available to solicit input from interested parties, including the public.

**Appendix A**  
Technology-Based Effluent Limitation Calculations

**Table 1: Applicable ELG Subparts and Production Levels**

Subpart	Description	Average Daily Production
Subpart D - Thermoplastic Resins (40 CFR § 414.41 and 40 CFR § 414.43)	Polycarbonate, Polybutylene terephthalate, and Polyetherimide Production	-----
Subpart F - Commodity Organic Chemicals (40 CFR § 414.61 and 40 CFR § 414.63)	Phenol and Acetone Production	-----
Subpart G - Bulk Organic Chemicals (40 CFR § 414.71 and 40 CFR § 414.73)	Bisphenol-A and Phosgene Production	-----
Subpart I - Direct Discharger Point Sources that use End-of-Pipe Biological Treatment (40 CFR § 414.91)	Polycarbonate, Polybutylene terephthalate, Polyetherimide, Phenol, Acetone, Bisphenol-A, and Phosgene Production	-----
Subpart F – Chlor-alkali Subcategory (Chlorine & Sodium or Potassium Hydroxide Production) (40 CFR § 415.62(b) and 40 CFR § 415.63(b))	Chlorine Production	574,728 lbs./day
Subpart B – Cleaning Water Subcategory (40 CFR § 463.22)	Cleaning water for plastic product and shaping equipment that has come in contact with plastic material	-----

**Table 2: Subpart D - Thermoplastic Resins (40 CFR § 414.41)**

Thermoplastic Resins Subpart D 414.41	Parameters	ELG (mg/l)			Calculated Mass-Based Limits (lbs./day)		
		Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units
	BOD5	24	64	mg/l	1362	3632	lbs./day
	TSS	40	130	mg/l	2270	7377	lbs./day

Thermoplastic Resins Monthly Average Mass-Based Limit for BOD<sub>5</sub> =  $24 \text{ mg/l} \times 8.345 \times 6.8 \text{ MGD} = 1362 \text{ lbs./day}$

**Table 3: Subpart F - Commodity Organic Chemicals (40 CFR § 414.61)**

Commodity Organic Chemicals Subpart F 414.61	Parameters	ELG (mg/l)			Calculated Mass-Based Limits (lbs./day)		
		Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units
	BOD5	30	80	mg/l	1702	4540	lbs./day
	TSS	46	149	mg/l	2610	8455	lbs./day

Commodity Organic Chemicals Monthly Average Mass-Based Limit for BOD<sub>5</sub>  
 $= 30 \text{ mg/l} \times 8.345 \times 6.8 \text{ MGD} = 1702 \text{ lbs./day}$

**Table 4: Subpart G - Bulk Organic Chemicals (40 CFR § 414.71)**

Bulk Organic Chemicals Subpart G 414.71	Parameters	ELG (mg/l)			Calculated Mass-Based Limits (lbs./day)		
		Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units
	BOD5	34	92	mg/l	1929	5221	lbs./day
	TSS	49	159	mg/l	2781	9023	lbs./day

Bulk Organic Chemicals Monthly Average Mass-Based Limit for BOD<sub>5</sub>  $= 34 \text{ mg/l} \times 8.345 \times 6.8 \text{ MGD} = 1929 \text{ lbs./day}$

**Table 5: Subpart I - Direct Discharger Point Sources that use End-of-Pipe Biological Treatment (40 CFR § 414.91)**

	Parameters	ELG (mg/l)			Calculated Mass-Based Limits (lbs./day)		
		Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units
<b>BAT for 40 CFR 414 Subparts D, F, G, and I 40 CFR 414.91</b>	<b>Acenaphthene</b>	22	59	ug/l	1.25	3.35	lbs./day
	<b>Acenaphthylene</b>	22	59	ug/l	1.25	3.35	lbs./day
	<b>Acrylonitrile</b>	96	242	ug/l	5.45	13.73	lbs./day
	<b>Anthracene</b>	22	59	ug/l	1.25	3.35	lbs./day
	<b>Benzene</b>	37	136	ug/l	2.10	7.72	lbs./day
	<b>Benzo(a)anthracene</b>	22	59	ug/l	1.25	3.35	lbs./day
	<b>3,4-Benzofluoranthene</b>	23	61	ug/l	1.31	3.46	lbs./day
	<b>Benzo(k)fluoranthene</b>	22	59	ug/l	1.25	3.35	lbs./day
	<b>Benzo(a)pyrene</b>	23	61	ug/l	1.31	3.46	lbs./day
	<b>Bis(2-ethylhexyl) phthalate</b>	103	279	ug/l	5.84	15.83	lbs./day
	<b>Carbon Tetrachloride</b>	18	38	ug/l	1.02	2.16	lbs./day
	<b>Chlorobenzene</b>	15	28	ug/l	0.85	1.59	lbs./day
	<b>Chloroethane</b>	104	268	ug/l	5.90	15.21	lbs./day
	<b>Chloroform</b>	21	46	ug/l	1.19	2.61	lbs./day
	<b>2-Chlorophenol</b>	31	98	ug/l	1.76	5.56	lbs./day
	<b>Chrysene</b>	22	59	ug/l	1.25	3.35	lbs./day
	<b>Di-n-butyl phthalate</b>	27	57	ug/l	1.53	3.23	lbs./day
	<b>1,2-Dichlorobenzene</b>	77	163	ug/l	4.37	9.25	lbs./day
	<b>1,3-Dichlorobenzene</b>	31	44	ug/l	1.76	2.50	lbs./day
	<b>1,4-Dichlorobenzene</b>	15	28	ug/l	0.85	1.59	lbs./day
	<b>1,1-Dichloroethane</b>	22	59	ug/l	1.25	3.35	lbs./day
	<b>1,2-Dichloroethane</b>	68	211	ug/l	3.86	11.97	lbs./day
	<b>1,1-Dichloroethylene</b>	16	25	ug/l	0.91	1.42	lbs./day
	<b>1,2-trans-Dichloroethylene</b>	21	54	ug/l	1.19	3.06	lbs./day
	<b>2,4-Dichlorophenol</b>	39	112	ug/l	2.21	6.36	lbs./day
	<b>1,2-Dichloropropane</b>	153	230	ug/l	8.68	13.05	lbs./day

	<b>1,3-Dichloropropylene</b>	29	44	ug/l	1.65	2.50	lbs./day
	<b>Diethyl phthalate</b>	81	203	ug/l	4.60	11.52	lbs./day
	<b>2,4-Dimethylphenol</b>	18	36	ug/l	1.02	2.04	lbs./day
	<b>Dimethyl phthalate</b>	19	47	ug/l	1.08	2.67	lbs./day
	<b>4,6-Dinitro-o-cresol</b>	78	277	ug/l	4.43	15.72	lbs./day
	<b>2,4-Dinitrophenol</b>	71	123	ug/l	4.03	6.98	lbs./day
	<b>2,4-Dinitrotoluene</b>	113	285	ug/l	6.41	16.17	lbs./day
	<b>2,6-Dinitrotoluene</b>	255	641	ug/l	14.47	36.37	lbs./day
	<b>Ethylbenzene</b>	32	108	ug/l	1.82	6.13	lbs./day
	<b>Fluoranthene</b>	25	68	ug/l	1.42	3.86	lbs./day
	<b>Fluorene</b>	22	59	ug/l	1.25	3.35	lbs./day
	<b>Hexachlorobenzene</b>	15	28	ug/l	0.85	1.59	lbs./day
	<b>Hexachlorobutadiene</b>	20	49	ug/l	1.13	2.78	lbs./day
	<b>Hexachloroethane</b>	21	54	ug/l	1.19	3.06	lbs./day
	<b>Methyl Chloride</b>	86	190	ug/l	4.88	10.78	lbs./day
	<b>Methylene Chloride</b>	40	89	ug/l	2.27	5.05	lbs./day
	<b>Naphthalene</b>	22	59	ug/l	1.25	3.35	lbs./day
	<b>Nitrobenzene</b>	27	68	ug/l	1.53	3.86	lbs./day
	<b>2-Nitrophenol</b>	41	69	ug/l	2.33	3.92	lbs./day
	<b>4-Nitrophenol</b>	72	124	ug/l	4.09	7.04	lbs./day
	<b>Phenanthrene</b>	22	59	ug/l	1.25	3.35	lbs./day
	<b>Phenol</b>	15	26	ug/l	0.85	1.48	lbs./day
	<b>Pyrene</b>	25	67	ug/l	1.42	3.80	lbs./day
	<b>Tetrachloroethylene</b>	22	56	ug/l	1.25	3.18	lbs./day
	<b>Toluene</b>	26	80	ug/l	1.48	4.54	lbs./day
	<b>Total Chromium</b>	1,110	2,770	ug/l	5.15	12.85	lbs./day
	<b>Total Copper</b>	1,450	3,380	ug/l	6.73	15.68	lbs./day
	<b>Total Cyanide</b>	420	1200	ug/l	1.95	5.57	lbs./day
	<b>Total Lead</b>	320	690	ug/l	1.48	3.20	lbs./day
	<b>Total Nickel</b>	1,690	3,980	ug/l	7.84	18.47	lbs./day
	<b>Total Zinc</b>	1,050	2,610	ug/l	4.87	12.11	lbs./day

	<b>1,2,4-Trichlorobenzene</b>	68	140	ug/l	3.86	7.94	lbs./day
	<b>1,1,1-Trichloroethane</b>	21	54	ug/l	1.19	3.06	lbs./day
	<b>1,1,2-Trichloroethane</b>	21	54	ug/l	1.19	3.06	lbs./day
	<b>Trichloroethylene</b>	21	54	ug/l	1.19	3.06	lbs./day
	<b>Vinyl Chloride</b>	104	268	ug/l	5.90	15.21	lbs./day

BAT for 40 CFR 414 Subparts D, F, G, and I Monthly Average Mass-Based Limit for Vinyl Chloride =

$$= 104 \text{ ug/l} \times \frac{1 \frac{\text{mg}}{\text{l}}}{1,000 \frac{\text{ug}}{\text{l}}} \times 8.345 \times 6.8 \text{ MGD} = 5.90 \text{ lbs./day}$$

The 40 CFR 414.91 mass-based effluent limitations for Total Chromium, Copper, Total Cyanide, Lead, Nickel, and Zinc were calculated using a flow of 1.436 MGD. The Phenol/Acetone process wastewater has an average flow of 0.526 MGD. The Bisphenol-A process wastewater has an average flow of 0.030 MGD. Combined the two average flows equal 0.556 MGD.

$$0.526 \text{ MGD} + 0.030 \text{ MGD} = 0.556 \text{ MGD}$$

BAT for 40 CFR 414 Subparts D, F, G, and I Monthly Average Mass-Based Limit for Total Chromium =

$$1,110 \text{ ug/l} \times \frac{1 \text{ mg/l}}{1,000 \text{ ug/l}} \times 8.345 \times 0.556 \text{ MGD} = 5.15 \text{ lbs./day}$$

**Table 6: Subpart F – Chlor-alkali Subcategory (40 CFR § 415.62(b) and 40 CFR § 415.63(b))**

	Parameters	ELG (lbs per 1,000lbs. of product)			Calculated Mass-Based Limits (lbs./day)		
		Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units
Chlor-alkali Subcategory 40 CFR 415.62(b)/415.63(b)	TSS	0.51	1.1	lbs	293	632	lbs./day
	Copper	0.0049	0.012	lbs	2.82	6.90	lbs./day
	Lead	0.0024	0.0059	lbs	1.38	3.39	lbs./day
	Nickel	0.0037	0.0097	lbs	2.13	5.57	lbs./day
	TRC	0.0079	0.013	lbs	4.54	7.47	lbs./day

Chlorine Production Monthly Average Mass-Based Limit for Total Copper =

$$\frac{574,728 \text{ lbs. of chlorine produced}}{1 \text{ day}} \times \frac{0.0049 \text{ lbs. of Total Copper}}{1,000 \text{ lbs. of chlorine produced}} = 2.82 \frac{\text{lbs. of Total Copper}}{\text{day}}$$

**Table 7: Subpart B – Cleaning Water Subcategory(40 CFR § 463.22)**

	Parameters	ELG (mg/l)			Calculated Mass-Based Limits (lbs./day)		
		Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units
Cleaning Water Subcategory Subpart B 40 CFR 463.22	BOD5	22	49	mg/l	0.37	0.82	lbs./day
	Oil & Grease	17	71	mg/l	0.28	1.18	lbs./day
	TSS	36	117	mg/l	0.60	1.95	lbs./day

Cleaning Water Monthly Average Mass-Based Limit for BOD<sub>5</sub> = 22 mg/l × 8.345 × 0.002 MGD = 0.37 lbs./day



**Table 8: Final Technology-Based Effluent Limitations (TBELs) for Total Suspended Solids, Total Copper, Total Lead, Total Nickel, and BOD<sub>5</sub>**

Parameter	40 CFR 414.41 (lbs./day)		40 CFR 414.61 (lbs./day)		40 CFR 414.71 (lbs./day)		40 CFR 414.91 (lbs./day)		40 CFR 415.62(b) & 40 CFR 415.63(b) (lbs./day)		40 CFR § 463.22 (lbs./day)		Final TBELs (lbs./day)	
	Monthly Average	Daily Max	Monthly Average	Daily Max	Monthly Average	Daily Max	Monthly Average	Daily Max	Monthly Average	Daily Max	Monthly Average	Daily Max	Monthly Average	Daily Max
TSS	2270	7377	2610	8455	2781	9023	-----	-----	293	632	0.60	1.95	7954	25489
Total Copper	-----	-----	-----	-----	-----	-----	6.73	15.68	2.82	6.90	-----	-----	9.54	22.58
Total Lead	-----	-----	-----	-----	-----	-----	1.48	3.20	1.38	3.39	-----	-----	2.86	6.59
Total Nickel	-----	-----	-----	-----	-----	-----	7.84	18.47	2.13	5.57	-----	-----	9.97	24.04
BOD <sub>5</sub>	1362	3632	1702	4540	1929	5221	-----	-----	-----	-----	0.37	0.82	4994	13393

Final TSS Monthly Average TBEL= 2270 *lbs./day* + 2610 *lbs./day* + 2781 *lbs./day* + 293 *lbs./day* + 0.60 *lbs./day* =  
7954 *lbs./day*

## **Appendix B**

### **USFWS Review of the Ohio River 316(b) CWIS Facilities**

#### **Introduction**

Our review of Clean Water Act §316(b) for facilities located on the Ohio River in Indiana are of particular concern. Following §7 of the Endangered Species Act (ESA), EPA concluded a programmatic consultation with the National Marine Fisheries Service (NMFS) for coastal waters and the US Fish and Wildlife Service (USFWS) for inland waters culminating in a biological opinion May 19, 2014 entitled Endangered Species Act Section 7 Consultation Programmatic Biological Opinion on the U.S. Environmental Protection Agency's Issuance and Implementation of the Final Regulations Section 316(b) of the Clean Water Act. This document summarizes establishes how the USFWS is to review and comment on § 316(b) facilities.

“EPA tailored the Rule toward the protection of fish and shellfish. The Rule provides that the Director may establish in the permit additional control measures, monitoring and reporting requirements that are designed to minimize incidental take, reduce or remove more than minor detrimental effects (as defined on page 4 of this Opinion) to federally-listed species.”

“The Rule’s application to ‘fish and shellfish’ and the Director’s authority to establish additional measures to protect listed species and habitat will encompass all taxa of listed species, including their critical habitat. This consultation also considers the direct and indirect effects to federally-listed species caused by facilities operating CWIS under requirements of the Rule, including but not limited to: impingement, entrainment, loss of prey, changes in water quality, and flow alteration.”

“Where required by the Director, the owner or operator must implement any requirements for additional control measures, monitoring, and reporting that are designed to minimize incidental take, reduce or remove more than minor detrimental effects to federally-listed species and designated critical habitat, or avoid jeopardizing federally-listed species or destroying or adversely modifying designated critical habitat (e.g., prey base).

“And although the current 0.5 FPS velocity with a cooling tower likely result in entrainment reductions equivalent to at least 90 percent of the reduction that could be achieved through compliance with intake flow commensurate with a closed-cycle system (i.e., 125.92(c)(1)). Exceptions are described in the Rule, and the Director may establish alternative requirements or additional BTA standards for entrainment on a site-specific basis. Where required by the Director, the owner or operator must implement any requirements for additional control measures, monitoring, and reporting that are designed to minimize incidental take, reduce or remove more than minor detrimental effects to federally-listed species.”

“The Services may still consider the detrimental effects of the facility operation to be more than minor if federally-listed threatened or endangered species are subject to impingement.” The Services may therefore still recommend species protection measures. For threatened and endangered species, all unauthorized take is prohibited by the ESA.”

“Where required by the Director, the owner or operator must implement any requirements for additional control measures, monitoring, and reporting that are designed to minimize incidental take, reduce or remove more than minor detrimental effects to federally-listed species and designated critical habitat, or avoid jeopardizing federally-listed species or destroying or adversely modifying designated critical habitat (e.g., prey base). Such control measures, reporting, and monitoring requirements may include measures or requirements that may have been identified by the Services during their 60 day review of the permit application or the public comment period.”

### Ohio River Threatened and Endangered Mussels

Several species of threatened and endangered mussels are found in the Ohio River, although distribution and numbers are reduced (Table 1). The sheepsnose mussel is the most widely distributed of these species, and based on these records, we assume that sheepsnose mussels are within the “action area” (as defined in the ESA Consultation, May 19, 2014) of each of the 316(b) facilities (Fig. 1 and Fig. 2).

Table 1. Federally Threatened and Endangered mussels found in the Ohio River.

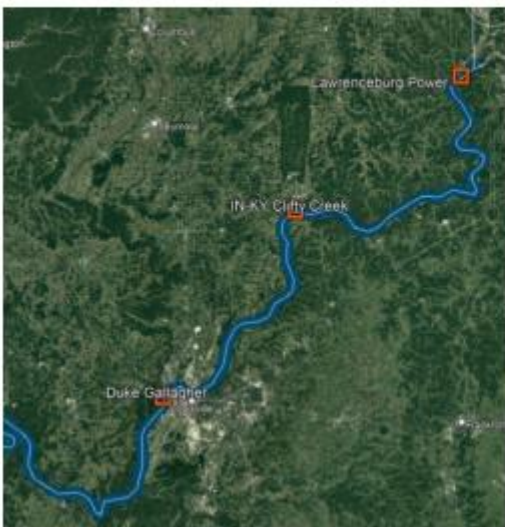
Pink mucket (pearlymussel)	<i>Lampsilis abrupta</i>	
Snuffbox mussel	<i>Epioblasma triquetra</i>	
Sheepsnose Mussel	<i>Plethobasus cyphus</i>	
Rabbitsfoot	<i>Quadrula cylindrica cylindrica</i>	
Fanshell (pearlymussel)	<i>Cyprogenia stegaria</i>	
Fat pocketbook	<i>Potamilus capax</i>	
Rayed Bean	<i>Villosa fabalis</i>	
Round hickorynut	<i>Obovaria subrotunda</i>	proposed
Longsolid	<i>Fusconaia subrotunda</i>	proposed

The life cycle of the sheepsnose is complex and includes a stage parasitic on fish. Males release sperm into the river current. As females siphon water for food and respiration, they also siphon sperm that fertilizes their eggs. Within special gill chambers, fertilized eggs develop into microscopic larvae called glochidia. After they mature, female mussels expel the glochidia, which must then attach to the gills or fins of a specific species of fish to continue developing into a juvenile mussel.

Sheepnose glochidia are expelled in jellylike masses of mucus that look like something a fish would eat. These masses of mucus are called conglutinates. Sheepnose conglutinates are narrow, red or pink, and discharged in an unbroken line they look like small worms. When a fish eats a conglutinate, glochidia are exposed to and attach to the fish's gills. If glochidia successfully attach to a host fish, they mature into juvenile mussels within a few weeks, then drop off. If they land on suitable habitat, glochidia grow and mature into adult mussels. Anywhere from 1 to 50 or more glochidia can mature on an individual host fish. Using fish as hosts allows the sheepnose to move upstream and populate habitats it could not otherwise reach. Sheepnose are long-lived, with individuals living as long as 30 years.

Sheepnose mussels live in larger rivers and streams where they are more readily found in shallow areas with moderate to swift currents that flow over coarse sand and gravel. However, they have also been found in areas of mud, cobble and boulders, and in large rivers they may be found in deep runs.

**Fig. 1. Lawrenceburg Power, IN KY Clifty Creek and Duke Gallagher 316(b) facilities in relation to Sheepnose mussel occupied habitat (navy buffer).**



**Fig. 2. AB Brown, FB Culley, Alcoa Warrick, AEP Rockport, SABIC Innovative Plastics 316(b) facilities in relation to Sheepnose mussel occupied habitat (navy buffer).**



## CWIS Impact Analysis

As you can see from the complex nature of the Sheepnose life-cycle, there are several opportunities for cooling water withdrawals to potentially interfere with reproduction and or harm some life stages of freshwater mussels (Table 2).

Male sheepnose release gametes into the water column that filter-feeding female sheepnose need to acquire to fertilize the eggs. Cooling water intakes can reduce availability of mussel gametes by reducing dispersal. We assume that nearby sheepnose mussels would have a small percent reduction in produced gametes available for female sheepnose in the action area.

Female sheepnose release conglomerates containing developing glochidia into the environment for foraging host fish to consume. We assume it is possible for cooling water intakes to have a small percent reduction in the availability of conglomerates for consumption by fish hosts.

We have evaluated the information provided to us by the 316(b) facilities and the information readily available to us and have determined the following:

- Sheepnose are present in the “action area” as determined by the ESA consultation.
- The fish community at each of these 316(b) facilities contain high densities of potential sheepnose host fish, consisting of sauger, and much more likely, 7 to 17 species common minnow species.
- Habitats near these intakes are suitable and occupied by many species of sheepnose host fish.
- Through entrainment and or impingement, each of these facilities have ongoing impacts to host fish.
- While some facilities have documented impacts to host fish at various life stages, others have described potential impacts to glochidia narratively. And yet, all of these facilities impact millions of aquatic organisms each year.
- Many facilities deny impacts to endangered mussels, but that is largely because they fail to consider the reproductive life cycle of freshwater mussels.
- We estimate that between 1 and 3 host fish containing sheepnose glochidia are currently being taken by each of these facilities each year.

Incidental take of endangered species (and threatened species, as applicable, under 16 U.S.C. 1533(d)) is prohibited under the ESA (16 U.S.C. 1538), unless it is permitted (16 U.S.C. 1539(a)) or exempted (16 U.S.C. 1536(o)) by the Services. Absent such exemption or permit, any facility operating under the authority of this Rule must not take federally threatened or endangered species.

Table 2. Ohio River CWIS Impact analysis on Sheepnose mussels.

Facts and Assumptions	316(b) Facilities			
	Lawrenceburg	Clifty Creek	AB Brown	FB Culley
Based on best information available, we assume sheepnose mussels are in the "action area" as defined by the EPA / FWS ESA consultation. The action area includes where the mussels are found and where the host fish can roam	Tanner's embayment	river bank	river bottom	riverbank
mussel present / likely to be present	11.5 MGD	1,434 MGD	8.7 MGD	311 MGD
	nearby	nearby	yes	yes
habitat for host fish (cyprinid minnows ) near intakes	very good	good	moderate	good
presence of some host fish species near intakes confirmed (# species present)	yes (7)	yes	yes (7)	yes (17)
we assume some host fish are "infected" with sheepnose glochidia in the "action area"	yes	yes	yes	yes
direct impacts that could reduce successful sheepnose reproduction				
intakes can interrupt mussel gamete dispersal (% per yer)	10%	10%	3%	6%
intakes can entrain conglomerates (% per year)	1%	3%	1%	3%
intakes can entrain "infected" host fish (# per year)	3	3	1	3
indirect impacts that could reduce successful sheepnose reproduction				
intakes reduce host fish populations via reduced recruitment	yes	yes	yes	yes
thermal discharge can adversely impact timing of reproductive maturation among males and females	NQ	NQ	NQ	NQ

Table 2. Ohio River CWIS Impact analysis on Sheepnose mussels (continued).

Facts and Assumptions	316(b) Facilities			
	Alcoa Warrick	AEP Rockport	Duke Gallagher	SABIC Inno Plastics
Based on best information available, we assume sheepnose mussels are in the "action area" as defined by the EPA / FWS ESA consultation. The action area includes where the mussels are found and where the host fish can roam	riverbank	river bottom	riverbank	off bank structure?
mussel present / likely to be present	550 MGD yes	36 MGD yes	435.9 MGD nearby	12.5 MGD nearby
habitat for host fish (cyprinid minnows ) near intakes	good	moderate	good	good
presence of some host fish species near intakes confirmed (# species present)	yes (17)	yes	yes	yes
we assume some host fish are "infected" with sheepnose glochidia in the "action area"	yes	yes	yes	yes
direct impacts that could reduce successful sheepnose reproduction				
intakes can interrupt mussel gamete dispersal (% per yer)	10%	3%	10%	6%
intakes can entrain conglutinates (% per year)	3%	1%	2%	2%
intakes can entrain "infected" host fish (# per year)	3	1	3	1
indirect impacts that could reduce successful sheepnose reproduction				
intakes reduce host fish populations via reduced recruitment	yes	yes	yes	yes
thermal discharge can adversely impact timing of reproductive maturation among males and females	NQ	NQ	NQ	NQ

NQ - not quantified

## **Other Indirect Impacts**

During the ESA consultation process, EPA and the Services did evaluate other stressors including pollution and thermal impacts to threatened and endangered species. The 316(b) Biological Opinion summarizes this way:

“To date, EPA has not been able to reliably estimate the impact of thermal discharge associated with CWIS operations on federally-listed species or designated critical habitat. However, more information will now be generated as the Rule promotes the exchange of information or technical assistance between the Services and the Directors. EPA now commits to the oversight of that process, which will allow EPA to more reliably estimate the physical, chemical, or biotic stressors that are likely to be produced as a direct or indirect result of thermal discharge activities.”

Thermal discharges can adversely impact the health of freshwater mussels and interfere with the timing of reproductive maturation among individual male and female mussels in the action area of such discharges. This is an issue that needs continued study and its impacts are not quantifiable at this time.

## **Recommendations to Minimize Take**

The Director may establish in the permit additional control measures, monitoring and reporting requirements that are designed to minimize incidental take, reduce or remove more than minor detrimental effects. In order to minimize the take of Sheepnose mussels, we request that the Director require the 316(b) facilities to implement or otherwise support freshwater mussel augmentation project(s). Sheepnose augmentation efforts must be designed and completed in close coordination with knowledgeable experts and appropriate agency contacts. By implementing such measures take of the Ohio River Sheepnose population can be minimized.

## **Sheepnose Mussel Augmentation Plan**

We envision that a Sheepnose augmentation plan would likely consist of the following components: Administrative and Permitting, Brood Stock Acquisition, Propagation effort, Quantitative Processing (tagging), Release Site Reconnaissance Habitat Assessment, and Monitoring augmentation site(s).

### *Administrative and Permitting*

We assume there will be some administrative costs associated with this augmentation project. There will be planning, permitting, coordination with Indiana biologists, federal agency biologists, and also hatchery propagation specialists. For this step, and each of the following steps should be well documented and available to the public at the appropriate point.

### *Brood Stock Acquisition*

Brood stock acquisition is a necessary step in the augmentation process. This can be accomplished in various ways, but the key is coordination with Indiana biologists, federal agency biologists, and also hatchery propagation specialists. Networking within this growing community of practice will be key to accomplishing this task.



### *Propagation*

Propagation in a laboratory / hatchery should be done by experienced qualified facilities that have routinely worked with rare mussels. A suitable grow out period of likely 3 plus years is expected. They have to be of a sufficient size in order to be tagged. This also gives them a greater chance of living to reproductive maturity.

### *Quantitative Processing*

After a sufficient period of growing out juvenile mussels, an effort to tag mussels so that they can be monitored is important. This involves using adhesives and pit tags. Using pit tags also requires an outlay of funds to purchase the equipment needed to detect pit tags.

### *Release Site Reconnaissance Habitat Assessment*

Some reconnaissance and habitat assessment should be undertaken in the planning phase of this project so that returning grown out, pit tagged Sheepsnose to the Ohio River environs can be optimized for success.

### *Monitoring Augmentation Sites*

Monitoring mussel augmentation sites should take place a year after and 2 years after mussels have been placed in the Ohio River. As previously mentioned, these monitoring efforts should be well documented to allow us to evaluate the success of augmentation of sheepsnose mussels as a measure to minimize take associated with 316(b) facilities of the Ohio River.